ICOBI 2024

INTERNATIONAL CONFERENCE ON BUSINESS INNOVATION

7TH INTERNATIONAL CONFERENCE ON BUSINESS INNOVATION

"DIGITAL RESILIENCE: NAVIGATING THE GLOBAL BUSINESS LANDSCAPE

FOCUSING

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Organized by

NSBM Green University
Colombo, Sri Lanka
November 08, 2024

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PREFACE

It is with great pleasure that we extend a warm welcome to all the authors and delegates of the International Conference on Business Innovation; ICOBI 2024. We are delighted to present the proceedings of this esteemed academic event with confidence on the invaluable insight presented in the pages within.

For the seventh consecutive year, NSBM Green University is proud to host the International Conference on Business Innovation, ICOBI, a platform that consistently challenges the frontiers of academic discussion. In the realm of higher education, NSBM remains a leader in fostering innovation and scholarly engagement. ICOBI 2024 reflects our dedication to exploring digital resilience, underscoring our commitment to advancing knowledge and innovation amidst change.

This year, under the theme "Digital Resilience: Navigating the Global Business Landscape", ICOBI takes a bold step into the examining the transformative technologies that empower organizations to withstand disruptions while advancing societal progress on a global scale. In an era defined by digital transformation, this conference seeks to spark critical discussions on harnessing digital resilience to empower organizations and communities navigating the complexities of a globalized business landscape.

Digital resilience has become essential for organizations striving to navigate the complexities of the global business landscape. ICOBI 2024 serves as a vital platform to bring together local and international researchers, academics, and industry experts to deliberate on the profound impact of digital resilience to shape global businesses. Our theme aligns with today's imperative to leverage digital innovation as a force for social good. This conference will explore how businesses, governments, and communities can unite to drive transformative societal impacts through the strategic and ethical deployment of digital technologies for strategic adaptability, thereby fostering a forward-thinking mindset that empowers organizations to thrive in a volatile, yet interconnected world.

As we embark on this intellectual journey, we extend our heartfelt gratitude to Prof. E. A. Weerasinghe, Vice-Chancellor of NSBM Green University, and Prof. Chaminda Rathnayake, Deputy Vice-Chancellor, for their steadfast support and visionary leadership. We also express our sincere thanks to Prof. Baratha Dodankotuwa, Head of Academic Development and Quality Assurance, for his invaluable guidance, and to Ms. Thilini De Silva, Dean of the Faculty of Business, for her expertise and insightful contributions.

We extend our sincere appreciation to all local and international presenters and participants, whose contributions greatly enriched this conference. The success of ICOBI 2024 has been made possible through the dedication of our reviewers and the committed efforts of the Conference Organizing Committee.

We truly believe that ICOBI 2024 will inspire meaningful academic discussions and pave the way for innovative solutions to build a digitally resilient future. We extend our best wishes to all attendees and trust that your experience here will be both enriching and memorable.

The Conference Organizing Committee
ICOBI 2024

MESSAGE FROM VICE-CHANCELLOR

PROF. E.A. WEERASINGHE

In today's rapidly advancing digital era, businesses face constant change due to technological disruptions that redefine traditional practices. The theme of this year's International Conference on Business Innovation (ICOBI 2024) — "Digital Resistance: Navigating the Business Landscape" — reflects our collective commitment to addressing these challenges head-on. As organizations worldwide manage issues from cybersecurity threats to data-driven decision-making and automation, this conference serves as a vital platform for pioneering solution-focused discussions through industrial and academic research. NSBM Green University has long upheld the importance of fostering a resilient, forward-looking approach to business innovation. By gathering scholars, practitioners, and industry experts, ICOBI 2024 aims to inspire critical thinking and strategic insights to help businesses adapt to evolving technologies, resist digital vulnerabilities, and harness new opportunities. This year's conference encourages a multidisciplinary perspective, recognizing that navigating digital transformation requires diverse insights across fields.

I am especially proud of our Business Faculty, whose dedication to organizing ICOBI 2024 has resulted in an event that continually draws high-calibre research and invaluable contributions from around the world. I commend the faculty, as well as our presenters and participants, for their commitment to advancing meaningful discussions that contribute to both academic and practical progress.

May this year's conference spark critical discussions that inspire transformative ideas and enduring collaborations ultimately contributing to resilience and success in the ever-changing digital age!

Prof. E.A. Weerasinghe
Vice Chancellor – NSBM Green University

MESSAGE FROM DEPUTY VICE-CHANCELLOR

PROF. CHAMINDA RATHNAYAKE

It is my distinct pleasure to welcome you to the Seventh International Conference on Business Innovation (ICOBI) 2024, hosted by NSBM Green University. ICOBI has become a powerful platform for engaging with pressing challenges and dynamic opportunities shaping today's global business landscape. This year's theme — "Digital Resistance: Navigating the Business Landscape" — reflects the urgent need to address both the transformative potential of technology and the resilience required to adapt to its complexities.

Digital transformation has become more than a trend; it is an essential force driving business evolution. From automation and artificial intelligence to big data and machine learning, these technologies are rapidly changing business models, operational strategies, and customer expectations. Yet, as organizations work to leverage these innovations, they must also build resilience alongside the ability to anticipate, withstand, and adapt to digital disruptions. ICOBI 2024 will bring together researchers, industry experts, and policymakers to explore ways in which businesses can not only survive but thrive by balancing digital adoption with robust, strategic resilience.

NSBM Green University is proud to foster these crucial conversations as part of our broader mission to support national development and economic progress. Through conferences like ICOBI, we connect academia with industry, enabling multidisciplinary perspectives and innovative solutions that benefit both the academic community and society at large. This event highlights our commitment to advancing knowledge, shaping future leaders, and addressing the evolving demands of the digital era.

I extend my heartfelt thanks to our Business Faculty, whose dedication and vision have brought this conference to life, and to the esteemed presenters and participants for their invaluable contributions. May ICOBI 2024 be a source of inspiration, collaboration, and meaningful advancements. I am confident that the insights shared here will spark new approaches and empower us all to navigate the digital future effectively.

I wish all attendees a truly engaging and enriching experience.

Prof. Chaminda Rathnayake
Deputy Vice Chancellor – NSBM Green University

MESSAGE FROM THE HEAD OF ACADEMIC DEVELOPMENT AND QUALITY ASSURANCE

PROF. J. BARATHA DODANKOTUWA

It is indeed with great pride I witness the Seventh International Conference on Business Innovation (ICOBI) 2024, hosted by NSBM Green University. This conference has grown into a vital platform for discussing the challenges and opportunities in business innovation, and it continues to provide an important space for advancing knowledge, fostering collaborations, and generating actionable solutions. This year's theme, "Digital Resistance: Navigating the Business Landscape," could not be more timely or relevant as digital transformation has radically altered how businesses operate, from automation and artificial intelligence to data analytics and blockchain. These advancements present unprecedented opportunities for innovation and growth, but they also introduce new challenges such as cybersecurity risks, workforce disruptions, and ethical dilemmas. The concept of "digital resistance" reflects the need for businesses to adapt to these changes strategically, ensuring resilience and sustainability as they navigate this rapidly evolving landscape.

At NSBM Green University, we are committed to promoting a research culture that tackles real-world challenges and contributes to sustainable economic development. Through ICOBI, we aim to bring together scholars, industry leaders, and policymakers to discuss how businesses can harness the power of digital technologies while remaining grounded in ethical, social, and economic considerations. This conference will provide valuable insights into how organizations can balance the demands of digital innovation with the need for stability and long-term growth. As the Head of Academic Development and Quality Assurance, I am immensely proud of the dedication of our faculty and students, whose work and contributions are central to the success of this conference. I also extend my heartfelt thanks to the Organizing Committee for their tireless efforts in making this event a reality.

I wish all participants a fruitful and rewarding experience at ICOBI 2024. May this conference inspire new ideas, foster meaningful collaborations, and provide the knowledge necessary to navigate the complexities of the digital business landscape.

Prof. Baratha Dodankotuwa
Head of Academic Development and Quality Assurance - NSBM Green University

MESSAGE FROM THE DEAN OF THE FACULTY OF BUSINESS

MS.THILINI DE SILVA

Dear Esteemed Colleagues, Researchers, and Participants,

It is with great pleasure that I welcome you to the International Conference of Business Innovation 2024 , centered around the timely and thought-provoking theme: Digital Resistance: Navigating the Business Landscape. As we continue to witness the rapid transformation of the business world, this year's theme invites us to explore the complex challenges and opportunities that arise in response to digital disruption.

The concept of digital resistance encapsulates the tensions that businesses, leaders, and employees face as they strive to adapt to the ever-evolving digital landscape. While technological advancements offer immense potential for growth and efficiency, they also present significant challenges, from cybersecurity threats to the complexities of managing digital transformation. In this context, our gathering serves as an opportunity for us to critically examine how businesses can navigate this resistance while ensuring sustainable success.

The papers and discussions presented throughout this conference reflect the diverse perspectives and innovative approaches being adopted across various industries. Whether it's overcoming digital divides, leveraging new technologies to stay competitive, or cultivating resilient organizational cultures, the insights shared here will undoubtedly contribute to shaping the future of business in an increasingly digital world.

As we embark on this journey of exploration and learning, I encourage you to engage actively, share your expertise, and challenge the prevailing narratives. It is through such collaborations and knowledge exchanges that we can collectively address the pressing issues and seize the vast opportunities that lie ahead.

I would like to extend my gratitude to the organizing committee, speakers, and participants for their dedication and commitment to making this conference a success. I am confident that our collective efforts will inspire innovative solutions and drive positive change across the global business community.

Thank you, and I look forward to the fruitful discussions and insights that will emerge from this event.

Thilini De Silva
Senior Lecturer
Dean, Faculty of Business – NSBM Green University

MESSAGE FROM THE CONFERENCE CHAIR

MS. ANNE PATHIRANAGE

It is with great pleasure and honour that I pen this message on behalf of the Organizing Committee of the International Conference on Business Innovation (ICOBI) 2024, hosted by NSBM Green University. The success of ICOBI over the past years has set a strong foundation for this year's event, marking another important milestone in our pursuit of academic excellence and innovation. ICOBI 2024 unfolds at a time when digital transformation is reshaping industries and economies worldwide. The theme "Digital Resistance: Navigating the Business Landscape" is particularly timely, as it highlights the need for businesses to not only embrace digital technologies but also develop resilience in the face of rapid and disruptive change. This theme calls for a careful balance between embracing technological advancements and managing the challenges they bring.

As South Asia's first Green University Town, NSBM is committed to sustainable development, ensuring that growth is achieved in a way that benefits both the environment and society. ICOBI 2024 offers academics, undergraduates, emerging researchers, and experts a platform to present their findings, exchange ideas, and explore collaborative opportunities. The conference aims to explore the opportunities and challenges of digital transformation in business, focusing on how organizations can thrive in the ever-evolving landscape. The keynote speeches and presentations by distinguished guests will provide invaluable insights on how businesses can leverage digital technologies while addressing key concerns such as cybersecurity, ethics, and workforce transformation. These discussions will help participants navigate the complexities of the digital world and chart a course for sustainable and resilient growth.

I would like to extend my deepest gratitude to the Vice Chancellor, Prof. E. A. Weerasinghe, and all NSBM staff for their continued support in advancing the University's research culture. Special thanks go to the Organizing Committee for their dedication in making ICOBI 2024 possible. I also appreciate the speakers, authors, and presenters for their contributions.

I hope ICOBI 2024 inspires meaningful discussions and collaborations, shaping a future where businesses thrive in the digital age.

Ms. Anne Pathiranage
Conference chair/Senior lecturer
Department of Accounting and Finance
Faculty of Business – NSBM Green University

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KEYNOTE SPEECH 1

DR. MINCHUL SOHN
PLYMOUTH UNIVERSITY,
UNITED KINGDOM

DIGITAL RESILIENCE: A SOCIO-TECHNICAL APPROACH TO SUSTAINABLE TRANSFORMATION

Before I begin my talk on digital resilience, I would like to share a brief personal reflection. Like everyone here today, I believe we as academics embody the timeless spirit of scholarship – forever curious, forever questioning, forever seeking new understanding. This eternal pursuit of knowledge keeps us all young at heart, regardless of our years in academia. However, I must admit, I am often amazed by how technically savvy today's younger generation is. They intuitively navigate new technologies with ease, which sometimes leaves me not only puzzled but feeling every year of my age.

Yet, I find myself in a particularly interesting position generationally. I belong to what you might call a "bridge generation' – one that has experienced both the analogue and digital worlds. We remember the tactile feel of library card catalogues, yet are equally at home with digital databases. We have witnessed the transformation from physical to digital not as mere observers, but as active participants in this great shift.

It is perhaps this dual perspective that has sparked my deep interest in today's topic. Standing at this intersection of analogue and digital experiences, I believe I can offer some unique insights into our collective digital journey. And I am excited to share these thoughts with you today.

As we race towards ever-increasing digitalisation, we often hear phrases like 'digital transformation', 'digital disruption', or 'digital revolution'. But perhaps the most crucial phrase we should be discussing is 'digital wisdom'. In an era where artificial intelligence can generate instant solutions, and algorithms can optimise processes in milliseconds, ***we must ask ourselves: Are we building systems that enhance human capability, or are we simply chasing ultra-efficient outcomes?***

Let us begin by understanding the journey of digitalisation. It starts simply enough – with digitisation, the conversion of information from analogue to digital formats. Consider the familiar example of converting paper documents to PDF files. Or a cassette tape to a CD. This basic transformation, while useful, merely changes the format without fundamentally altering how we work with the information.

However, digitalisation represents a far

more profound change. According to the OECD (2019), digitalisation is "the use of digital technologies and data as well as interconnection that results in new or changes to existing activities." This transformation fundamentally reshapes how we work, interact, and create value. When we use digital technologies to reshape our reporting processes or harness data analytics for decision-making, we are not just doing old things in new ways. We are creating entirely new possibilities.

Today, few phenomena shape everyday life as profoundly as digitalisation does. Its impact extends far beyond mere technological change, touching every aspect of our professional and private lives. In the business context, digitalisation is revolutionising how products are made, sold, and distributed, how companies are managed, and how they compete globally.

Yet, as we appreciate and admire these technological advances, we face a crucial challenge. The true test of our digital age is not just about implementing new technologies or optimising processes. It is about developing the wisdom to use these tools in a way that enhances human capacities, not diminishes them. This challenge becomes particularly acute when we consider how digitalisation affects different contexts and communities globally.

I would like to talk about these interconnected dimensions of digital transformation today, which I believe warrant our collective attention. While my observations draw from supply chain management research, I am sure they speak to broader issues we all face in our respective fields.

The transformative power of digitalisation extends far beyond mere technological adoption. From a theoretical perspective, digital technologies fundamentally alter economic structures by reducing transaction costs. However, what makes this transformation particularly fascinating is not just its economic implications, but how it reshapes social and organisational behaviours.

Let me illustrate this through some examples from my research in supply chain management, which I believe echoes broader business phenomena.

Consider how digitalisation has transformed global supply chains.

Traditional supply chains were slow, sequential, and often opaque. Today's digital supply chains create what we call a 'digital thread' – a continuous stream of real-time data connecting every node in the network. This transformation manifests in three key ways:

First, visibility and integration. For example,

- Smart factories and warehouses generate real-time operational data
- Digital platforms enable seamless information flow across organisations (Culotta et al., 2024) (Ivanov et al., 2022)
- Cloud-based systems create unified views of complex global operations (Xing et al., 2016) (Jede and Teuteberg, 2016)
- Second, decision intelligence:
- AI and analytics transform raw data into actionable insights (Zamani et al., 2023)

- Digital twins enable risk-free experimentation (Bhandal et al., 2022)
- IoT sensors provide granular, real-time monitoring (Oliveira-Dias et al., 2023)
- Third, adaptive response:
- Automated systems monitor and adjust to disruptions in real-time
- Predictive analytics anticipate challenges before they emerge

These transformations in supply chain management mirror wider changes across business functions. Consider how marketing departments use digital platforms to create personalised customer experiences as well as demand information; financial services leverage blockchain for transparent transactions; healthcare and pharmaceutical sectors exploit cloud-based collaborative drug development platforms.

However, what makes these transformations truly interesting is not their technological sophistication, but rather how they are reshaping human decision-making processes. While algorithms can process vast amounts of data and suggest optimal solutions, the real value emerges when we combine these capabilities with human insight and judgment.

This brings us to a critical juncture in our discussion. While these digital capabilities offer unprecedented opportunities for efficiency and innovation, they also present us with fundamental questions about adaptation, particularly in diverse global contexts.

How do we ensure these transformations serve rather than supersede human capabilities?

As you all can easily agree, digital technologies are indeed transformative. However, implementing them requires complex challenges that go beyond technical considerations. In other words, while these technologies are often perceived as general-purpose solutions, organisations face significant challenges in harnessing their potential for specific use cases. The overwhelming scope of data, e.g., from generation and transfer to evaluation and storage, presents not just technical challenges but fundamental questions about organisational capacity and human capability.

These implementation complexities become particularly pronounced when we examine them through a global lens. What might appear as purely technical or organisational challenges in developed economies often manifest as fundamental structural barriers elsewhere. This brings us to a critical consideration: the emergence of what I term a 'stratified digitalisation' phenomenon, where different regions and economies progress at vastly different rates, creating new forms of digital divide.

This stratified digitalisation, a new emerging digital divide, is not merely a split between those with and without digital access. Rather, it is a complex spectrum of digital capability and readiness. For example,

1. Infrastructure gaps

While cloud computing promises unlimited computational power, and digital platforms assume constant connectivity, many regions lack reliable basic connectivity

The prerequisite investment in digital infrastructure often exceeds local resource capabilities

2. Capability asymmetries

- Advanced economies push towards AI-driven automation while others struggle with basic digital adoption
- Knowledge transfer becomes increasingly complex across different levels of digital maturity

Beyond these structural challenges, we face emerging risks that require careful consideration.

1. Technological dependencies

- Over-reliance on digital systems can create new vulnerabilities
- Cybersecurity threats grow more sophisticated as systems become more integrated
- The 'black box' nature of AI-driven decisions raises questions about accountability and transparency

2. Human capital implications

- The rapid pace of digital change often outstrips human adaptive capacity
- Traditional knowledge and expertise risk being devalued in pursuit of digital efficiency

- The emphasis on quantifiable outcomes may overshadow valuable qualitative insights

These challenges point to a fundamental question.

In our rush to embrace digital transformation, are we adequately considering the human dimension?

This brings us to what I believe is the critical challenge of our digital age – not just implementing technology, but developing the wisdom to use it to enhance rather than diminish human capability and judgment.

I believe that true digital resilience lies not in the robustness of our systems, but in our capacity to maintain human wisdom in an increasingly digitised world. This brings us to what I believe is the cornerstone of sustainable digital transformation: ***digital literacy.***

However, we must **reconceptualise** digital literacy beyond its conventional definition. While technical competency in using digital tools is important, indeed, digital literacy encompasses something far more fundamental. It's about developing the capacity to:

- Critically evaluate digital solutions beyond quantifiable metrics
- Understand the socio-technical contexts in which these tools operate
- Maintain human agency in increasingly automated environments
- And most importantly, value and preserve meaningful processes, not just efficient outcomes

Perhaps the most significant challenge in our AI-driven era is what I would call the 'process paradox' – the tendency for powerful digital tools to emphasise outcomes while obscuring or eliminating valuable processes. As researchers and practitioners, we must be particularly mindful of this trend. When an AI system can generate instant solutions, we risk losing:

- The learning embedded in the problem-solving journey
- The collective wisdom built through collaborative exploration
- The serendipitous discoveries that emerge from 'inefficient' processes
- The human connections formed through shared challenges
- This suggests several critical considerations for our academic and business communities:
- How might we develop assessment criteria that value process as much as outcome?
- What metrics could capture the quality of human engagement in digital systems?
- How can we nurture digital wisdom, i.e. digital literacy, alongside digital skills?

As we navigate this digital age, perhaps our greatest challenge—and opportunity—lies not in mastering new technologies, but in preserving and enhancing human wisdom within digital frameworks. Digital resilience, then, becomes not just about robust systems or efficient processes, but about maintaining our capacity for critical thinking, meaningful collaboration, and thoughtful evaluation.

The future of digitalisation must be one where technology amplifies rather than diminishes human capability, where efficiency complements rather than replaces meaningful processes, and where digital tools serve the deeper purposes of human development and understanding.

KEYNOTE SPEECH 2

PROF. AROSHA ADIKARAM
UNIVERSITY OF COLOMBO

NAVIGATING CHANGE WITH RESILIENCE: A COMPREHENSIVE APPROACH TO THRIVING IN THE GLOBAL BUSINESS LANDSCAPE

It is both a pleasure and an honor to be part of the International Conference on Business Innovation (ICOBI) 2024 here at NSBM Green University. Today, I'm excited to share my thoughts on a theme that resonates deeply with this year's conference: "Resilience in Navigating the Global Business Landscape." Specifically, I'll focus on a critical question: how can we cultivate resilience as professionals in a rapidly changing global environment? This message is especially directed toward the young undergraduates in the audience, but it's also intended for professionals at all stages of their careers who are navigating these dynamic times.

In today's world, we are faced with unprecedented changes. Rapid digital advancements, global economic shifts, evolving social dynamics, fluctuating market trends, and shifting consumer expectations have made resilience essential—not only for businesses but also for each of us as individuals. To succeed, we must be prepared to continuously adapt. In this light, I believe there are four critical skills that we need to build and refine to remain resilient and thrive in this landscape.

1. Adaptability and Lifelong Learning

The first skill is adaptability and a commitment to lifelong learning. In a world defined by volatility, uncertainty, complexity, and ambiguity—the VUCA world—our technical skills and disciplinary expertise are important but will not suffice alone. We must cultivate the ability to unlearn and relearn continuously. What we know today may become obsolete tomorrow, and the willingness to adapt is what allows us to stay relevant. Lifelong learning means not only expanding our knowledge but also staying curious and open to new perspectives, ideas, and technologies.

Adaptability also means staying tuned to changes around us. We need to be aware of trends, both within our industry and beyond, and be proactive in our growth, always looking ahead to anticipate what might come next. This requires humility:

we must be willing to let go of what we think we know and embrace change, even when it's challenging.

2. Interpersonal Skills and Empathy

The second key skill is developing strong interpersonal skills, especially in a world where digital connections often overshadow face-to-face interactions. As social media and online communications become more prevalent, building authentic relationships requires more deliberate effort. It's important to remember the power of personal, in-person connections and to work at building relationships that go beyond the superficial.

In this context, empathy and respect for diversity are vital. Empathy allows us to understand others' perspectives, fostering trust and collaboration. In an increasingly diverse workplace, respecting different backgrounds, cultures, and viewpoints not only enriches our work environment but also enables us to create inclusive spaces where everyone feels valued. By bringing back the human touch—especially in our digital age—we can build stronger, more meaningful professional relationships that stand the test of time.

3. Intrapersonal Skills and Self-Awareness

The third critical area is intrapersonal skills—our relationship with ourselves. Resilience isn't just about how we interact with others; it's also about how we manage our own mental and emotional well-being. Self-awareness, mindfulness, and self-care are crucial to maintaining resilience in a world that often prioritizes external validation and success over personal well-being.

Building a strong relationship with ourselves involves understanding who we are, recognizing our strengths and weaknesses, and managing our mental health. It's essential to carve out time for reflection, to listen to our inner needs, and to practice self-compassion. This also extends to taking care of our physical health, which is foundational to our mental resilience. When we are grounded in ourselves, we are better equipped to handle external pressures and can approach challenges with a clear, balanced mindset.

4. Problem-Solving and Solution-Oriented Thinking

The fourth and final skill is problem-solving. In a world where obstacles are inevitable, our ability to solve problems creatively and efficiently becomes one of our greatest assets. Resilient professionals are not defined by the challenges they face but by how they approach and overcome them. We must focus on being solution-oriented—seeing obstacles as opportunities to innovate rather than reasons to stall.

This skill involves not only analyzing problems logically but also approaching them with an open mind and a positive attitude. Instead of dwelling on what went wrong, resilient individuals seek ways to make things right. They contribute to solutions rather than becoming part of the problem. Developing this mindset requires both critical thinking and creativity, as well as the courage to take

risks and try new approaches.

In conclusion, resilience is not a single trait but a combination of skills and attitudes that we must actively cultivate. Adaptability, interpersonal skills, self-awareness, and problem-solving form the foundation of resilience. Together, they equip us to navigate a world that is constantly changing, to face challenges head-on, and to continue growing both personally and professionally.

Thank you all for the opportunity to speak here today. I hope you leave this conference with new insights, ready to embrace the future with resilience and confidence. Let us work together to unlock the potential within ourselves and create a thriving, innovative global business landscape.

CONTENTS

The Relationship Between Behavioural Biases and Financial Inclusion with Special Focus on the Moderation Role of Financial Literacy

Rhythmani Perera[1]*, Tharushi Piyumalee[2], and Roshni Samarasinghe[3]

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ABSTRACT

In modern capitalist societies, financial development is often seen as a key determinant of a country's overall progress. As such, improving financial inclusion and literacy has become crucial to advance the global rankings of developing countries. This study investigates the impact of behavioural biases on financial inclusion in Sri Lanka's growing digital economy, whilst analysing the moderating role of financial literacy. Using data from 207 households and a Partial Least Squares Structural Equation Modelling (PLS-SEM) approach, the study highlights optimism and herding as major factors driving people towards services provided by financial institutions; conversely, the impact of loss aversion and self-control biases are deemed insignificant. Financial literacy was found to strengthen the positive effects of optimism and herding, thereby showcasing its importance in moderating the optimal usage of digital financial tools. However, the researchers also note that addressing issues like loss aversion and poor self-control require more personalized approaches, such as behavioural nudges, beyond just financial education.

In a context where digitization is reshaping economies, the above findings suggest that financial inclusion should be approached through both technological and human behavioural lenses. For policymakers, this means that strategies must integrate financial education with behavioural insights to truly promote inclusive financial systems. The study points to the need for further research into other behavioural influences and how different demographic factors may interact with financial decision-making in the digital era.

Keywords - **Financial Inclusion, Financial Literacy, Behavioural Biases**

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1. INTRODUCTION

Digital economy has emerged as a significant force in the global financial landscape, transforming the manner in which individuals and businesses access and utilize financial services. In developing economies such as Sri Lanka, reforming a nation's financial system through its digitization can help promote sustainable levels of financial literacy and ongoing integration within the formal economy thereby ensuring growth and societal well-being. Financial inclusion assures people having access to affordable and appropriate financial products and services that drive economic development, reduce poverty, and accelerate overall improvement in lives. As per the main regulatory bodies in developed countries such as United Nations Development Programme, World Bank, G20, and Bill and Melinda Gates Foundation, there is a substantial need for financial inclusion in every sector of the population in order to achieve sustainable economic growth and eliminate poverty, significantly in developing countries (Bongomin et al., 2018). However, despite the heavy technological advancements and developments taking place, achieving 100% financial inclusion remains a challenge specially for emerging economies like Sri Lanka.

Digital economy can expand financial literacy through easily accessible and interactive learning tools. Through digital platforms, users can access information that concerns concepts of finance, budgeting, savings, and investment strategies, allowing them to make more informed decisions about their finances (Calderón & Canales, 2021). Furthermore, integrating digital technologies into financial services allows people to track their spending, monitor their credit, understand their current financial situation, and thus provide financial literacy.

Financial inclusion and financial literacy have played a dominant role in the economic development of Sri Lanka during this digital era. According to estimates by the World Bank, approximately 89% of adults in Sri Lanka reported having an account at a financial institution in the year 2021, though there are still substantial differences in access with relation to rural populations, women, and the low-income segment of the population. The level of financial literacy remains average, with the Central Bank of Sri Lanka (CBSL) estimating 57.9% of adults to demonstrate a basic understanding of key concepts in finance. Sri Lanka is currently positioned as a lower middle income country[1] with a GNI per Capital USD 3706 (lankastatistics.com) and poverty line has been increased up to Rs. 16,619 by 2023 March from Rs. 6966 in 2019 which can be mainly due to the significant inflation the country is experiencing since 2019.

While the rapidly growing digital economy presents opportunities to enhance financial inclusion and literacy, the adaptation to the usage of these tools remains very uneven with the highest level of irregularity in the

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[1]The World Bank defines country classes based on income level and accordingly countries within the range of Gross National Income per capita between $1,136 and $4,465 are classified as Lower Middle Income category.

most vulnerable communities, despite the great strides in mobile banking and digital financial services. Hence, there is a pressing need to understand what behavioural factors influence adoption and how these may be leveraged to promote sustained financial literacy and inclusion in order to overcome the challenges presented in enhancing digital economy within developing countries.

This study investigates the role of behavioural aspects of digital economy adaptation in realizing sustainable financial literacy and inclusion within the context of Sri Lanka. The research intends to test the impact of behavioural biases on financial inclusion and the moderating role of financial literacy in this relationship. The research will address two key questions:

1. What is the relationship between behavioural biases (self-control, optimism, herding, loss aversion) and financial inclusion?
2. Does financial literacy moderate the relationship between behavioural biases and financial inclusion?

Additionally, the study aims to determine the extent to which financial literacy influences the strength and direction of the association between behavioural biases and financial inclusion.

2. LITERATURE REVIEW

2.1. Financial Inclusion

Access to and usage of formal financial services has emerged as a key component of economic development (Ozili, 2020). Literature suggests that financial inclusion can contribute to reducing poverty, economic growth, and improved financial

stability of a country (Didenko et al., 2023). However, most developing countries face a significant challenge in achieving higher levels of financial inclusion amidst the numerous challenges it faces such as limited access to advanced technology, high cost of financial services, lack of financial literacy, etc. Literature suggests that ensuring improved access to financial services for the poor and underprivileged is a key approach to addressing significant economic challenges in a developing country (Adetunji & West, 2019).

The United Nations survey states, nearly three billion people worldwide do not have access to financial products and services offered by financial institutions; a majority of this community comprised of average class people in developing countries (Liu et al., 2021). As a developing country, Sri Lanka too faces numerous challenges in serving financial facilities to its community thereby extending a critical obstacle in improving the financial inclusion rate of the country. It is observed that the financial literacy among the people remain diverse based on the different levels of education, income, gender, age and so on (Heenkenda, 2014).

Even though a significant dearth of literature in behavioural impact on financial inclusion specifically pertaining the Sri Lankan (SL) context can be noticed, numerous studies have investigated recent trends, current status and impact on poverty and income inequality of financial inclusion within SL context (Madukala & Silva, 2022).

2.2. Behavioural bias

Despite how much details are available, human judgements can be influenced by their inherent self-interests affecting the decision-making process eventually leading to heightened market volatility (Perera & Gunathilaka, 2021). In literature, behavioural biases are viewed as departures from established norms, often arising from cognitive limitations, the use of heuristics or information processing methods (Traversky & Kahneman, 1974). Behavioural biases are influenced by numerous factors such as demographic characteristics, psychological factors, investor experience, cultural and social influences, and economic environment.

Demographic factors such as age, gender, and education impact the way investors perceive and react to risk and returns. For instance, Barber and Odean (2001) stated that men tend to be more overconfident compared to women when it comes to trading. Understanding the impact of demographic factors on individual investor behaviour, even per se, strengthens investment decision-making enormously, as it may help financial service providers to adapt their offerings to the needs of investors (Perera & Gunathilaka, 2021).

Psychological factors like risk appetite and emotional status play a critical role in investment decisions as high-risk appetite may result in overconfidence and herding (Kumar & Goyal, 2015) and emotional states like fear or excitement can stimulate the biases such as loss aversion (Shefrin, 2002).

A linkage between behavioural biases and financial inclusion can be identified through the awareness gained on how behavioural biases influence the individual access, use and engagement with various services issued by financial institutions. It should also be noted that behavioural biases can extend a significant barrier to financial inclusion by deviating individuals from rational decision-making events when they have access to financial services.

2.3. Self-control Bias

Self-control is the cognitive ability to regulate impulses, emotions, and behaviours in order to pursue long-term goals by delaying immediate fulfillment. Baumeister et al. (2007) view self-control as a limited resource that may be depleted over time; this suggests that longer exertions of willpower might reduce the individual's capacity to resist temptations later on. People with high self-control save and invest for the future whereas people with low self-control impulsive spending with taking undue risks. According to Pompian (2011), appropriate self-control factors are likely to promote making good financial decisions. Most impulsive action occurs as people fail to notice or consider long-run consequences for their current actions and therefore fail to manage their money (Vohs & Faber, 2007). In this respect, the lack of one's self-control promotes poor financial behaviour as people consume for the present and sacrifice their long-term financial security.

2.3.1. Self-Control and Financial Inclusion

Self-control may be defined as the ability of our future selves to control our current self. If there is a failure of self-control, then people act in a non-optimal way, and they may, for instance, delay the work despite knowing that they are better off spreading the workload over time (Ariely & Wertenbroch, 2002). Research has consistently demonstrated a positive impact of self-control on the financial behaviour and financial well-being of individuals. People with higher levels of self-control are more capable of saving money from their earnings and less likely to be anxious and insecure in financial matters (Stromback et al., 2017). Moffitt et al. (2011), note that individuals with stronger self-control in their small age were more likely to experience better financial outcomes in adulthood, including higher credit scores and fewer instances of financial distress. Consequently, the ability to manage impulses and focus on long-term financial goals leads to enhanced overall well-being and reduced financial vulnerability (Baumeister, 2002).

2.3.2. Behavioural Life Cycle Hypothesis

The Behavioural Life Cycle (BLC) Hypothesis, developed by Shefrin and Thaler (1988), extends the traditional life cycle theories on saving and consumption by considering behavioural perceptions of how individuals manage finances over their lifetimes. In direct contrast to the traditional life cycle hypothesis, wherein it is assumed that people would rationally smooth their consumption over lifetime, the BLC hypothesis takes into consideration various cognitive biases and mental accounting practices that affect financial behaviour.

The mental accounting concept of the BLC Hypothesis states that an individual divides his or her wealth among various mental accounts. These varied accounts are then treated differently by the individual, influencing their saving and spending decisions. For instance, people will often consider current income as being more spendable than future income, thus creating a tendency to spend immediate earnings and save less for the future (Thaler, 1990).

The study intends to examine the relationship between self-control and financial inclusion within the context of Sri Lankan individual households.

H1: There is a statistically significant relationship between self-control and financial inclusion

2.4. Optimism Bias

Sharot (2011), defines optimism as the divergence between the person's expectations and the outcome. If the outcome is better, the bias can be perceived as optimistic and otherwise pessimistic. Individuals' optimism depends on their desired outcomes. People tend to be more hopeful when they can control the consequences or have a strong commitment toward the action. Optimism bias is not merely a hypothetical situation, rather it significantly impacts macro and micro level activities. For instance, optimism levers high-stakes decisions, such as entrepreneurial decisions, investment

decisions, and risk management, among others (Bracha & Brown, 2012).

2.4.1. Optimism Bias and Financial Inclusion

This study seeks to investigate the significance of optimism bias on financial inclusion as financial inclusion is crucial for the economic development; especially in a country like Sri Lanka, optimism bias can influence the engagement levels of people with available financial services. Optimism bias can extend varied impacts such as low savings in a country since overconfidence on people could lead to overutilization of financial resources and low consumption of insurance products driven by the optimistic perception on future events.

H2: There is a statistically significant relationship between optimism and financial inclusion

2.5. Herding Bias

Herding can be explained as the person's willingness to imitate other's actions (Merli & Roger, 2013) as they tend to acquire information through observation. Herding behaviour is widely studied in the financial markets in buying and selling decisions where certain investors follow what the majority does. Herding behaviour can be further categorized as rational and irrational where rational herding behaviour could provide benefits to the decision maker and vice versa (Rachmawati et al., 2023). Mostly rational herding is justified when the individuals believe that the majority has access to accurate and reliable information. Herding can be further viewed as spurious and intentional, where intentional herding reflects the deliberate imitation of other's actions and spurious herding means that people with similar preferences are given the same set of information (Merli & Roger, 2013).

2.5.1. Herding Bias and Financial Inclusion

Herding bias can influence financial inclusion by encouraging the use of new financial products among a community. Additionally, herding behaviour could drive individuals to join microfinance institutions and groups when they see others getting benefited from the financial products and services offered by these institutions. However, it should be noted that some of these unintentional herding behaviours can result in negative consequences as well. For instance, if a person is motivated to borrow due to another's similar action, but without a proper plan of repaying the loan he or she can end up in a debt trap. Negative consequences arising from herding bias can be more apparent in underserved populations where limited access to reliable information and low financial literacy is seen. The current study aims to investigate the relationship between the herding bias and the financial inclusion in order to gain an understanding on its positive and negative effects.

H3: There is a statistically significant relationship between herding and financial inclusion

2.6. Loss Aversion Bias

According to Putler, 1992 an increase of a price and decrease of a price have asymmetric effects. While referring the

concept of loss aversion, Thaler (1980), states that gain has a smaller valuation than losing the same amount. The endowment effect defines the loss aversion where an individual's cognition will drive him to demand more money to give up something than he would be willing to pay to acquire the same.

Prior literature suggests that people express more distress when they face a loss than a pleasure coming from the same amount of gain. Additionally, a loss followed by another loss will be more painful than a loss incurred after a gain (Liu et al., 2023).

2.6.1. Prospect Theory

Loss aversion is a key concept first introduced by Daniel Kahneman and Amos Tversky in 1979, under the Prospect Theory. According to this theory, individuals perceive the outcomes of their decisions as gains and losses where they extend more sensitivity towards the losses (Kahneman & Tversky, 1979). To quantify loss aversion, it is required to measure the utility of gains and losses.

2.6.2. Loss Aversion Bias and Financial Inclusion

The tendency of people to engage with formal financial systems can be greatly influenced by loss aversion, especially when they perceive risks associated with savings, investments, borrowing, or the adoption of new financial products. In contrast, it has been noted in some contexts like Kenya that the people were reluctant to use financial products due to the fear towards attached fees and charges (Dupas & Robinson, 2013). This study aims to test the relationship

between loss aversion and financial inclusion in the Sri Lankan context by considering all these literature viewpoints.

H4: There is a statistically significant relationship between loss aversion and financial inclusion

2.7. Financial Literacy

The President's Advisory Council on Financial Literacy (PACFL, 2008) defines financial literacy as "the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial wellbeing". Various authors have provided numerous perspectives on financial literacy; Huston (2010) viewed financial literacy as a scale for an individual's ability in comprehending and applying personal financial information in the day-to-day life, while Bruhn et al., (2016), note that developing good financial habits at a young age can positively impact education, employment, and living standards throughout adulthood.

2.7.1. Financial Literacy and Financial Inclusion

Financial literacy and financial inclusion can be viewed as two interrelated concepts which play a critical role in stabilizing economy and individual wellbeing, particularly in developing countries. Numerous studies have investigated the interconnectedness of these constructs while Lusardi and Mitchell (2011), further note that there is a high tendency of engagement in retirement planning and financial market investments among individuals with high financial literacy. Less financially literate individuals may make unintentional

mistakes, avoid recommended financial practices, and struggle to handle unexpected economic shocks (Hung et al., 2009).

avoiding high-potential investments like stocks in favour of lower-risk options like savings accounts or bonds (Kahneman &
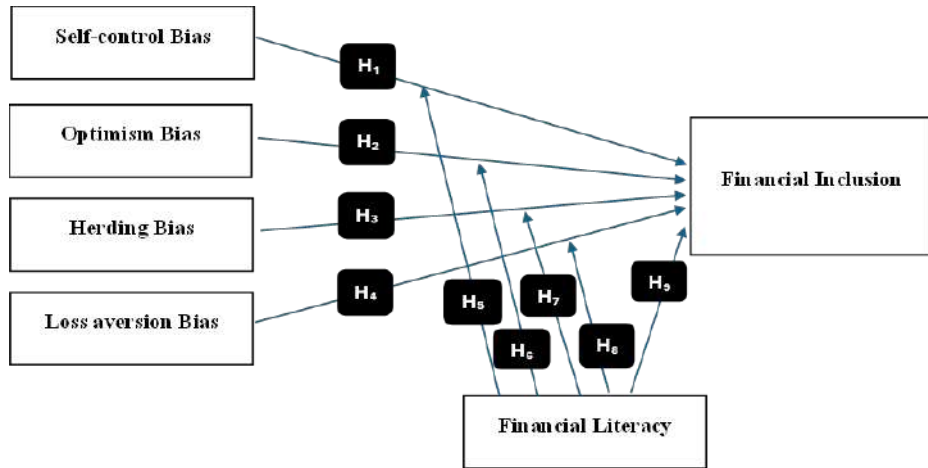
Figure 1: Conceptual Model

According to McKinsey Global Institute (2016), digital technology can reduce the cost of financial services by 80-90% in developing nations, making them more accessible to low-income individuals. Furthermore, the article suggests that combining financial literacy and poverty alleviation actions, such as providing digital financial services to the poor, can considerably improve financial inclusion.

Financial literacy has often been viewed as a reflection of individual behavioural biases. Barber and Ordean (2001) in their study on investor behaviour have observed that overconfident investors are more prone to trade frequently and end up incurring losses while financially literate individuals who have more understanding of the market can still make poor decisions due to overconfidence. Financially savvy individuals, while better at evaluating risks and returns, may still reflect loss aversion by

Tversky, 1979).

This study intends to investigate the moderation role of financial literacy with relation to the connection between the various behavioural biases briefly introduced above, and financial inclusion.

H5: Financial literacy moderates the relationship between self-control and financial inclusion

H6: Financial literacy moderates the relationship between optimism and financial inclusion

H7: Financial literacy moderates the relationship between herding and financial inclusion

H8: Financial literacy moderates the relationship between loss aversion and financial inclusion

H9: There is a statistically significant relationship between financial literacy and financial inclusion

3. METHODOLOGY

The chapter outlines the research design, sampling method, data collection methods, and analysis techniques used in the study. The main goal of the study, to examine the connections between behavioural biases influencing financial inclusion, was accomplished by gathering primary data from 207 individual households and analysing the data using Partial Least Squares Structural Equation Modelling (PLS-SEM).

3.1. Conceptual Framework

The conceptual model of the current study has been developed in accordance with the main variables tested and previously elaborated literature. The study tests the impact of behavioural biases towards financial inclusion of household individuals under the moderating effect of financial literacy. Self-control, optimism, herding and loss aversion are the behavioural biases considered in the study as independent variables. Financial inclusion is set as the dependent variable, and the moderating role of financial literacy has been tested in the model.

3.2. Research Design

The study employs a quantitative research design, as the primary objective is to quantify the relationships between independent and dependent variables and test the moderating role. The research is cross-sectional in nature, as the data was collected at a single point in time. This approach was chosen to allow for an in-depth examination of the households' behaviours and perceptions within a specific timeframe. The study follows survey strategy in answering research questions by distributing a questionnaire among individuals.

3.3. Sample and Data

The study utilized convenience sampling, a non-probability sampling method where participants are selected based on their availability and willingness to participate. This approach was chosen due to its practicality and ease of access to respondents, particularly given constraints such as time and resource availability. Primary data has been used in the analysis and sample size was 207 individual households. The unit of analysis for this research is the individual household. Data was collected at the household level, meaning that the characteristics and responses of each household serve as the basis for the analysis.

4. DATA ANALYSIS

After developing the questionnaire, responses were collected from 207 households. According to Barclay et al. (1995), as cited in Hair et al. (2020), the minimum sample size required to run Partial Least Square Structural Equation Modelling (PLS-SEM) can be determined using the "10 times rule." This guideline suggests that the sample size should be ten times the number of independent variables in the most complex regression within the PLS path model, which includes both measurement and structural models. Specifically, this means that the minimum sample size should equal ten times the maximum number of arrows pointing at any latent variable in the

model. While this rule serves as a useful benchmark, it is important to also consider the statistical power of the estimates when determining sample size. In this study, there are six independent variables, indicating that a minimum sample size of sixty is recommended. The data collected from the survey were subsequently entered into Microsoft Excel and imported into SmartPLS version 4.0 for analysis, following the methodology outlined by Liu et al. (2021).

4.1. Missing Value Treatment

Since all the question items were mandatory to be filled no missing items were detected and a missing value treatment was not required.

4.2. Pilot Study

Before data collection, a pilot study was conducted with 59 participants. According to Viechtbauer et al. (2015), this sample size is sufficient for research issues at a 5% significance level and a 95% confidence level.

In this pilot study, a path model was created, focusing on several metrics: indicator reliability, internal consistency reliability, and convergent validity.

Following the criteria set by Hair et al. (2022), indicator reliability was assessed through outer loadings, which ideally should be above 0.7. If the loadings range from 0.4 to 0.7, both internal consistency reliability and convergent validity require closer examination. Items meeting the threshold can be kept, while those that do not, should be removed. Specifically, items with outer loadings under 0.4 are advised for elimination (Hair et al., 2022). Consequently, four indicators related to financial inclusion and one indicator pertaining to financial literacy were discarded from the model.

The revised model was then utilized in the analysis. Additionally, this model was identified as reflective, in line with the conceptual framework described by Liu et al. (2021).

4.3. Measurement Model Evaluation

According to Hair et al. (2022), the evaluation of reflective models involves four key steps: assessing indicator reliability, internal consistency, convergent validity, and discriminant validity.

Table 1: Cronbach's Alpha, Composite Reliability (rho_a & rho_c), Average Variance Extracted (AVE)

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
FI	0.933	0.949	0.944	0.588
FL	0.818	0.897	0.879	0.654
HD	0.917	0.959	0.94	0.796
LA	0.863	0.932	0.912	0.775
OP	0.885	0.963	0.904	0.657
SC	0.971	0.972	0.978	0.919

4.3.1. Indicator Reliability

Indicator reliability was assessed based on outer loadings, following Hair et al. (2022). Reflective indicators with loadings above 0.7 were retained, while those between 0.4 and 0.7 underwent further evaluation. Indicators meeting the thresholds for reliability and validity were kept, while those below 0.4 were discarded. In this study, all indicators were retained, as their outer loadings exceeded 0.4, confirming the model's indicator reliability.

4.3.2. Internal Consistency Reliability

Internal consistency reliability can be assessed using two metrics: Cronbach's alpha and composite reliability (rho_a and rho_c). According to Hair et al. (2022), values above 0.7 indicate sufficient internal consistency. In this analysis, both Cronbach's alpha and composite reliability values (rho_a and rho_c) exceed 0.7 (see

Table 1), confirming the model's internal consistency reliability.

4.3.3. Convergent Validity

Convergent validity refers to the degree to which a measure correlates positively with other measures of the same construct (Hair et al., 2022). Hair et al. (2022) also emphasizes the significance of Average Variance Extracted (AVE) in this assessment, with ideal values exceeding 0.5. In this study, the AVE value exceeds 0.5 (see Table 1), confirming convergent validity.

4.3.4. Discriminant Validity

Discriminant validity refers to the extent to which a construct is distinct from other constructs, indicating that it captures unique phenomena not addressed by others in the model. According to Hair et al. (2022), the Heterotrait-Monotrait (HTMT) ratio is used to assess discriminant validity, with values

Table 2: HTMT Ratio

		FI	FL	HD	LA	OP	SC	FL x LA	FL x SC	FL x HD	FL x OP
FI											
FL		0.896									
HD		0.439	0.621								
LA		0.536	0.481	0.298							
OP		0.615	0.769	0.872	0.472						
SC		0.303	0.404	0.314	0.2	0.449					
FL x LA		0.397	0.329	0.145	0.865	0.366	0.092				
FL x SC		0.144	0.133	0.062	0.103	0.157	0.872	0.046			
FL x HD		0.268	0.35	0.806	0.172	0.543	0.041	0.11	0.105		
FL x OP		0.423	0.469	0.447	0.395	0.827	0.184	0.412	0.099	0.492	

ideally below 0.85 and below 0.90 for conceptually similar constructs. In this analysis, HTMT values are below 0.85 for most constructs, except for the relationships between optimism (OP) and herding (HD), as well as financial literacy (FL) and loss aversion (LA). The HTMT ratio for these pairs is 0.889 (see Table 2), which is acceptable.

4.4. Structural Model Evaluation

To evaluate the structural model, or the inner model, two steps have been used in this analysis: i.e. assessing the significance of the structural model relationships and assessing the model's explanatory power.

4.4.1. Assessing the Significance of the Structural Model Relationships

Following the execution of the PLS-SEM algorithm, estimations for the structural model relationships are derived, specifically the path coefficients that illustrate the hypothesized relationships between constructs (Hair et al., 2022). The obtained path coefficients and their interpretations are presented in Table 3.

To assess the significance of these relationships, a bootstrapping process was employed to obtain the p-values of the path coefficients. According to Hair et al. (2022), three methods can be used to assess the significance of path coefficients: evaluating p-values, t-values, and confidence intervals. Table 4 presents all path coefficients along

Table 3: Path Coefficients and Interpretations

	Path coefficients	Interpretation
FL → FI	0.510	This is the direct relationship between financial literacy (FL) and financial inclusion (FI). A change in financial literacy by one standard deviation increases the standard deviation of financial inclusion by 0.51 units, assuming all other factors remain constant.
HD → FI	0.381	A change in herding (HD) by one standard deviation increases the standard deviation of financial inclusion (FI) by 0.381 units, assuming all other factors remain constant.
LA → FI	0.057	A change in loss aversion (LA) by one standard deviation increases the standard deviation of financial inclusion (FI) by 0.057 units, assuming all other factors remain constant.
OP → FI	0.682	A change in optimism (OP) by one standard deviation increases the standard deviation of financial inclusion (FI) by 0.682 units, assuming all other factors remain constant.
SC → FI	-0.055	A change in self-control (SC) by one standard deviation decreases the standard deviation of financial inclusion by 0.055 units, assuming all other factors remain constant.
FL x LA → FI	0.002	The relationship between loss aversion (LA) and financial inclusion (FI) is increased by 0.002 standard deviation units due to the moderating effect of financial literacy (FL).
FL x SC → FI	0.046	The relationship between self-control (SC) and financial inclusion (FI) is increased by 0.046 standard deviation units due to the moderating effect of financial literacy (FL).
FL x HD → FI	-0.313	The relationship between herding (HD) and financial inclusion (FI) is reduced by 0.313 standard deviation units due to the moderating effect of financial literacy (FL).
FL x OP → FI	-0.599	The relationship between optimism (OP) and financial inclusion (FI) is reduced by 0.599 standard deviation units due to the moderating effect of financial literacy (FL).

with their corresponding p-values and t-values. Analysis of the p-values reveals that financial literacy, herding, and optimism exhibit statistical significance at a 95 percent confidence level, with p-values less than 0.05.

Financial literacy moderates the relationships between herding and financial inclusion, as well as between optimism and financial inclusion, both of which are statistically significant.

However, there are no statistically significant relationships between loss aversion and financial inclusion, nor between self-control and financial inclusion.

Furthermore, the moderating effect of financial literacy on the relationships between herding and financial inclusion, as well as between self-control and financial inclusion, was not statistically significant.

The examination of t-values yields consistent results.

4.4.2. Assessing the Model's Explanatory Power

As cited in Hair et al. (2022), the coefficient of determination (R^2) is the most commonly used measure to assess the explanatory power of the structural model. Hair et al. (2022) further state that an R^2 value greater than 0.65 is necessary for satisfactory explanatory power. In this study, the R^2 value is 0.789, indicating a satisfactory level of explanatory power (see Table 5).

Table 5: R square and Adjusted R square

	R-square	R-square adjusted
FI	0.789	0.779

Table 4: Path Coefficients, t-values, p-values and the Significance

	Path coefficients	t-values	p-values	Significance
FL → FI	0.510	3.794	0.000	Yes
HD → FI	0.381	5.839	0.000	Yes
LA → FI	0.057	1.501	0.133	No
OP → FI	0.682	5.292	0.000	Yes
SC → FI	-0.055	1.018	0.309	No
FL x LA → FI	0.002	0.042	0.967	No
FL x SC→ FI	0.046	0.961	0.336	No
FL x HD → FI	-0.313	5.785	0.000	Yes
FL x OP → FI	-0.599	5.656	0.000	Yes

This R² value indicates that 78.9 percent of the variance in financial inclusion is explained by the exogenous latent variables.

As stated in Hair et al. (2022), the R² value can also quantify the strength of the structural model relationships through the f² effect size. In this study, all exogenous latent variables exhibit f² values greater than 0.02, except for self-control, as well as the interaction effects of loss aversion and financial inclusion, and self-control and financial inclusion (see Table 6). This suggests that all other predictor constructs significantly affect the endogenous construct (FI).

Table 6: F square values

	f-square
FL → FI	0.365
HD → FI	0.268
LA → FI	0.023
OP → FI	0.337
SC → FI	0.010
FL x LA → FI	0.000
FL x SC→ FI	0.007
FL x HD → FI	0.161
FL x OP → FI	0.288

The final step addresses the f² effect size of the moderator. Kenny (2018), defines interaction term effect sizes of 0.005, 0.01, and 0.025 as small, medium, and large, respectively. The results of this analysis indicate no effect size for the moderation effect of financial literacy in the relationship between loss aversion and financial inclusion, and a small effect size for the moderation effect of financial literacy in the

relationship between self-control and financial inclusion. Neither of these relationships is statistically significant. However, the moderation effect of financial literacy in the relationships between herding and financial inclusion, as well as between optimism and financial inclusion, shows a large effect size and is statistically significant.

5. DISCUSSION

The results of this study provide valuable insights into the behavioural biases influencing financial inclusion within the digital economy of Sri Lanka, while also highlighting the moderating role of financial literacy. Consistent with prior literature, the study confirms that optimism and herding are significant predictors of financial inclusion, suggesting that individuals who display high levels of optimism or are influenced by herding are more likely to engage with financial products and services. The strong positive path coefficients for optimism (0.682) and herding (0.381) affirm their substantial influence on financial inclusion, with a notably strong effect from the former thereby indicating that individuals who exhibit an optimistic outlook toward their financial future are more likely to participate in financial systems. This suggests that positive expectations about financial outcomes can drive individuals to seek out and utilize financial products and services. The research findings stated by Nwosu and Ilori, 2024 argue that individuals with high OB would perceive lesser risk than the actual risk level which will lead to making poor financial choices. This is related here as perceived risk can impact significantly to one's decision

making when deciding where and when to put money as well as choosing financial products. The finding that herding behaviour also acted as a significant predictor of financial inclusion highlights the importance of social influence in promoting or hindering financial inclusion, particularly in communities where financial literacy may be limited and thereby prompting reliance on collective decision-making. The same fact is validated by Aarju et al., 2024 in their study signifying suggesting that informed investors are less influenced by herd behavior. In contrast, literature provides empirical evidence on zero moderating impact of financial literacy in the relationship between herding behavior and financial decisions (Rafandito et al., 2023; James et al., 2024; Anti et al., 2024)

On the other hand, the study revealed that loss aversion and self-control did not exhibit significant relationships with financial inclusion, contrary to expectations from behavioural economics. Loss aversion, while typically a strong predictor of financial decision-making in other contexts (Liu et al., 2021; Nelli et al., 2024; Johannes et al., 2020), seems to play a minor role in the financial behaviours of Sri Lankan households. This could be explained by the socio-economic environment and widespread promotion of mobile banking and digital financial services, which may provide individuals with greater confidence in the security and management of their finances. Similarly, the lack of a significant relationship between self-control and financial inclusion might suggest that financial behaviours in developing economies are more driven by external factors, such as accessibility to financial

tools, rather than by individual impulse control.

The study also investigated the moderating role of financial literacy in the relationships between behavioural biases and financial inclusion. The study shows that financial literacy strengthens the relationship between herding behaviour and financial inclusion, as well as between optimism and financial inclusion. Ramakrishnan, 2011 has stated that financial literacy enhances individuals' optimism by enabling them to make knowledgeable decisions while navigating financial products, thereby facilitating greater demand for financial inclusion and reducing potential risks associated with uninformed decisions. Furthermore, this research finding highlights the importance of enhancing financial literacy to enhance an individuals' ability to navigate through information, social influences, and various outlooks in a more constructive manner, leading to beneficial engagement with financial services. However, the lack of a significant moderating effect of financial literacy on the relationships between loss aversion and self-control on financial inclusion indicates that the fear of financial losses and lack of self-control may not be easily mitigated, despite being financially literate (Ramakrishnan, 2011; Liu et al., 2021). As such, these behavioural biases may require targeted interventions beyond financial education, such as personalized financial counselling or behavioural nudges, to address long-term psychological barriers to financial inclusion established due to changing socio-economic structures.

Overall, the findings suggest that behavioural biases, specifically optimism

and herding, play a crucial role in shaping financial inclusion in Sri Lanka. Financial literacy enhances these effects, reinforcing the importance of integrating financial education into national strategies in order to further promote financial inclusion. However, it is suggested that the behavioural biases of loss aversion and self-control may require additional consideration in future studies to fully understand their contextual impact and to develop possible strategies that effectively moderate them through financial knowledge.

6. CONCLUSION

This study contributes to the growing body of research on financial inclusion by identifying key behavioural biases that influence financial participation in Sri Lanka's digital economy. The findings emphasize that optimism and herding play significant roles in shaping individuals' engagement with financial services, while loss aversion and self-control are less impactful in this setting. Importantly, the study demonstrates that financial literacy can enhance the positive effects of herding and optimism, highlighting the need for financial education initiatives that go beyond basic knowledge and aim to address the behavioural drivers of financial behaviour.

For policymakers, these results suggest that promoting financial literacy alone is insufficient for achieving full financial inclusion. Instead, there should be an emphasis on behavioural interventions that account for social and emotional factors driving financial decisions. Digital platforms offering financial services should incorporate tools that both educate and guide users through the psychological hurdles of financial decision-making, thereby fostering more inclusive and sustainable financial systems in developing countries like Sri Lanka. This points to the need for more tailored interventions, possibly incorporating behavioural economics strategies such as nudges or financial incentives, to encourage greater financial inclusion among individuals with strong loss aversion or poor self-control.

The findings of this study have important implications for enhancing financial inclusion in Sri Lanka and other developing economies, highlighting the need to prioritize financial literacy programmes that target optimism and herding behaviours, while exploring complementary strategies to mitigate loss aversion and self-control issues. However, it is suggested that future research explore the role of other behavioural biases and investigate the long-term effects of financial literacy on financial inclusion. Additionally, understanding how demographic factors such as gender, income level, and education interact with behavioural biases could provide further insights into the dynamics of financial inclusion and digitization in developing economies.

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Numerical and Analytical Approaches to Optimal Control Strategies in Predator-Prey Models

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ABSTRACT

Since the late 1950s, Optimal Control Theory (OCT) has been used in a variety of modelling and control engineering applications. It is also widely used in many other areas. OCT can be classified into two categories: fixed-end point-free time and free-end fixed time. We study the free-end fixed-time problem in this work. One of the most significant and fascinating areas of ecology is the study of the predator-prey system. Therefore, it's important to maximize the overall population in a predator-prey system. A large-time optimal control problem has been solved using the iterative numerical approach in Aitziber Ibanez's research. In our study, we examined the optimal mixing time needed to maximize the total population of predators and prey using the Lotka-Volterra model. To achieve this, we utilized OCT and identified the structure of the control that maximizes the

total population. By analyzing the structure of control for different predation rates of prey and reproduction rates of predator values, in three cases, we were able to maximize the population at a preferred time by using the Pontryagin Maximum Principle. We partially segregate the prey population and mix after a specific time. The mixing rate is zero in two cases. This implies that it is necessary to keep separating the two populations all the time. However, this is not practical in most situations. For the third case, there is a maximum mixing time that can be found by numerical simulation or by using our estimate. Furthermore, we used MATLAB simulations to validate the results of our research. In future work, we will find out the number of switching times to simplify a complex system. This mathematical research would help the fishing industry plan their harvesting policy in a given time

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interval and will be important for the ecosystem to grow continually.

Keywords— **Optimal Control Theory, Lotka-Volterra Model, Pontryagin Maximum Principle.**

1. INTRODUCTION

Optimal control theory is a branch of mathematics that deals with finding control laws of a dynamic system to realize a given performance index. The primary aim is to establish the control function that will cause the system's behaviour to result in an optimal condition as defined by an objective. The predator-prey relationship is one of the basic concepts that underpin the field of ecology, focusing on the relationships between predators and their food. They assist ecologists to determine the state of a population and how various factors affect a species' existence. Here what we need is a system of two species where one species feeds off the other, like lions preying on deer or foxes feeding on rabbits. However, "predator" and "prey" can be plants as well as animals: Bear and berry, rabbit and leaf. The predator-prey system is also known as the Lotka-Voltera system, and we establish the optimal control variable (segregation rate) which brings the whole population to the highest level at a certain time using one of the most effective theorems in OCT, the Pontryagin Maximum Principle (PMP).

Consider the following Lotka-Volterra system,

$$\dot{x}(t) = r_1 x(t) - \mu_1 x(t) y(t)$$

$$\dot{y}(t) = -r_2 y(t) - \mu_2 x(t) y(t)$$

which defines the behaviour of a predator population y and its prey on the interval $[0, T]$. r_1 is the intrinsic rate of increase of prey in the absence of predation effect while r_2 is the rate of decrease of predators in the absence of prey. μ_1 and μ_2 are the predation rate of prey and the reproduction rate of predators respectively.

The optimal control $u(t)$ $(0 \leq u(t) \leq 1)$ which maximizes the total population at the time T, $g(T) = (x(T) + y(T)$, and satisfies the dynamical system.

$$\dot{x}(t) = r_1 x(t) - \mu_1 u(t) x(t) y(t)$$

$$\dot{y}(t) = -r_2 y(t) + \mu_2 u(t) x(t) y(t) x(0)$$

$$x(0) = xo, \qquad y(0) = yo$$

Where $1 - u(t)$ is the segregation rate at time t.

The Hamiltonian in the mechanics of a system is a function of three variables.

$$H(q, p, t) = p\dot{q} - L(q, \dot{q}.t)$$

where L is the Lagrangian which determines the dynamics and q is the state variable and $\dot{q}$ is its time derivative of q. p is called "conjugate momentum". The Hamiltonian of optimal control theory describe not the dynamics of a system but conditions for extremizing some scalar function with respect to a control variable u.

For example

$$\dot{x}_1 = f_1(x, t)$$

$$\dot{x}_2 = f_2(x, t)$$

where $(x_1, x_2) \in x$.

The Optimal Control Hamiltonian is given by,

$$H = p_1 f_1 + p_2 f_2$$

Where p_1 and p_2 are time-dependent costate variables.

$$f_1 = r_1 x(t) - \mu_1 u(t) x(t) y(t)$$

$$f_2 = -r_2 y(t) + \mu_2 u(t) x(t) y(t)$$

The Pontryagin Maximum Principle (PMP) is a core result of the field of optimal control, which is used to find the optimal control actions for nonlinear systems to achieve a desired objective. PMP gives us the necessary conditions for optimality through the Hamiltonian function which captures the state variables, the control variables and the adjoint variables. This principle states that the Hamiltonian must be optimized regarding the control variable at each point in time.

$$\dot{x}(t) = f(x(t), u(t)) \qquad t \geq 0$$

with the initial condition $x(0) = x_0$. Let $u^*(t)$ maximize the cost functional $g(x(T))$ on the interval $[0, T]$ and $x^*(.)$ be the corresponding trajectory. Then there exists a function $p^*: [0; T] \to \mathbb{R}$ such that,

$$\dot{x}^*(t) = \frac{\partial H}{\partial p}(x^*(t), p^*(t), u^*(t)),$$

$$\dot{p}^*(t) = -\frac{\partial H}{\partial p}(x^*(t), p^*(t), u^*(t))$$

$$\dot{p}^*(T) = \nabla g(x^*(T))$$

where the Hamiltonian H is defined as:

$$H(x, p, u) = f(x, u).p$$

In this case, the application of PMP enables derivation of the necessary conditions which provide for the optimal control u(t) that yields the total population at time T as a maximum.

2. METHODOLOGY

We first wrote the Hamiltonian of the Lotka-Volterra system and the cost function. Then we apply the PMP along with a graphical method to identify the optimal control. By analysing the structure of control for different μ_1 (predation rate of prey) and μ_2 (reproduction rate of predators) values, we were able to maximize the total population at a preferred time under three cases, using one of the most useful theorems in OCT, the Pontryagin Maximum Principle. The mixing rate was zero for two cases where $\mu_2 < \mu_1$ and $\mu_2 = \mu_1$. That means it is necessary to keep separating the two populations all the time. However, this may not be suitable for practical situations. For the third case where $\mu_2 > \mu_1$, there is a maximum mixing time that could be found by numerical simulation or by using our estimate. Furthermore, we depicted our results numerically in MATLAB.

3. RESULTS

3.1 Derivation of optimality condition

We apply the PMP along with the graphical method to identify the optimal control $u(t)$. Using PMP, we can derive equations for $\dot{p}_1(t) \& \dot{p}_2(t)$

$$\dot{p}_1(t) = -\left[p_1(t)\left(r_1 - p_1 \mu_1 u(t) y(t) \right) + p_2(t)\left(\mu_2 u(t) y(t) \right) \right]$$

$$\dot{p}_2(t) = -\big[p_1(t)\big(-\mu_1 x(t)u(t)\big) + p_2(t)\big(-r_2 + \mu_2 x(t)u(t)\big)\big]$$

Here we want to maximize the total population. So, we get g(t) = x(t) + y(t). To find the terminal values $p_1(T)$ and $p_2(T)$ use the following equations.

$$p_1(T) = \nabla_x g = 1$$
$$p_2(T) = \nabla_y g = 1$$

Optimal Hamiltonian $H *$ is then given by,

H*= $\max_{|u|\le 1} H(p_1, p_2, x, y, u(t))$

$$= \max_{|u|\le 1} \big[\big(p_1(t)x(t)r_1 - p_2(t)r_2 y(t)\big) + u(t)x(t)y(t)(p_2(t)\mu_2 - p_1(t)\mu_1)\big]$$

To maximize H, we maximize $\widetilde{H} =$ u(t)$(p_2(t)\,\mu_2 - p_1(t)\,\mu_1)]$
where $\widetilde{H}_{max} = u^*(t)(p_2(t)\,\mu_2 - p_1(t)\,\mu_1)$

$$u^* = \begin{cases} 0, & \big(\mu_2 p_2(t) - \mu_1 p_1(t)\big) < 0 \\ 1, & \big(\mu_2 p_2(t) - \mu_1 p_1(t)\big) > 0 \end{cases}$$

Let h(t) = $\big(\mu_2\, p_2(t) - \mu_1 p_1(t)\big)$
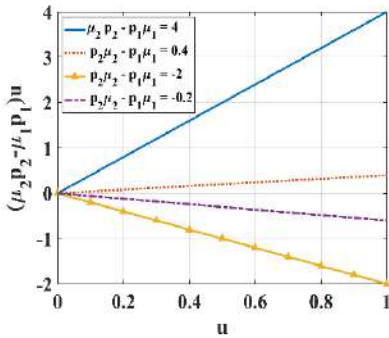
Figure 1: $\big(\boldsymbol{\mu_2\, p_2(t) - \mu_1 p_1(t)}\big)\boldsymbol{u}$ Vs $\boldsymbol{u}$

3.2 Analysis of the sign of h(t)

3.2.1 Case 1: $\mu_2 < \mu_1$

In Case 1, where the predation rate of prey (μ_2) is less than that of the reproduction rate of predators (μ_1).

Using the boundary condition, we can get $\big(\mu_2 p_2(T) - \mu_1 p_1(T)\big) < 0$. By considering short interval $[T - \epsilon_1, T]$ just before T $(\epsilon_1 > 0)$ and $\dot{p}_1(t), \dot{p}_2(t)$ equations, we can get $\big(\mu_2 p_2(T) - \mu_1 p_1(T)\big) < 0$ for $[T - \epsilon_1, T]$. Similarly considering a small time interval We can prove that $\big(\mu_2 p_2(T) - \mu_1 p_1(T)\big) < 0$ for the entire period. Hence $u^* = 0$ on $[0, T]$ for the case $\mu_2 < \mu_1$. Then we depict the results using MATLAB graph.
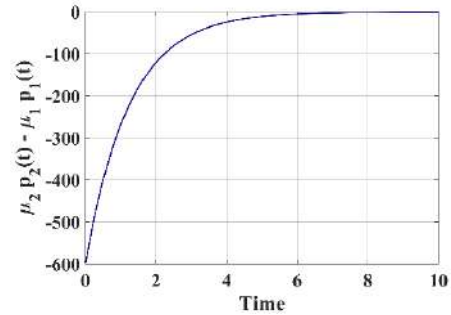
Figure 2: $\big(\boldsymbol{\mu_2\, p_2(t) - \mu_1 p_1(t)}\big)$ Vs Time

Here, $r_1 = 0.8$, $r_2 = 0.9$, $\mu_1 = 0.2$, $\mu_2 = 0.1$, $x_0 = 2$, $y_0 = 3$

3.2.2 Case 2: $\mu_1 = \mu_2$

Using $\dot{h}(t)$ and integrating factor method, we can get $\big(\mu_2 p_2(T) - \mu_1 p_1(T)\big) < 0$ for $[T - \epsilon_1, T]$. As we did in the previous case, we can constructively prove that $\big(\mu_2 p_2(T) - \mu_1 p_1(T)\big) < 0$ for the

entire period. Hence $u^* = 0$ on $[0, T]$ for the case $\mu_2 = \mu_1$. Then we depict the results using MATLAB graph.
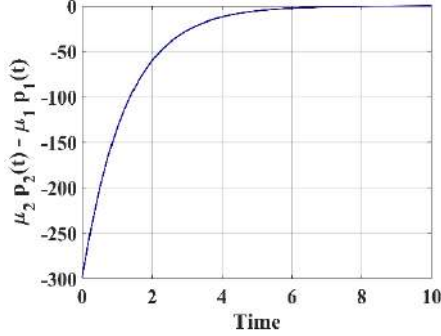
Figure 3: $(\mu_2\, p_2(t) - \mu_1 p_1(t))$ **Vs Time**

Here,
$r_1 = 0.8, \quad r_2 = 0.9, \quad \mu_1 = 0.1, \quad \mu_2 = 0.1,$
$x_0 = 2, y_0 = 3$

3.2.3 Case 3: $\mu_2 > \mu_1$

when $t = T$
$$\mu_2 p_2(T) - \mu_1 p_1(T) > 0$$

Using $\dot{h}(t)$ and integrating factor method, we can simplify the following,

$$\mu_2 p_2(t) - \mu_1 p_1(t)$$
$$= -e^{-f(t)} \left[\int_t^T (\mu_2 p_2(t) r_2 \right.$$

$$\left. + \mu_1 p_1(t)\, r_1)\, e^{f(t)} dt - e^{f(T)}[\mu_2 - \mu_1] \right]$$

Suppose there exist t_1 such that:
$$\mu_2 p_2(t_1) - \mu_1 p_1(t_1) < 0$$

Hence $u^* = 0$

Using the above equations, we have
$$\int_t^T (\mu_2 p_2(t) r_2 + \mu_1 p_1(t)\, r_1) e^{f(t)} dt$$
$$- e^{f(T)}[\mu_2 - \mu_1] > 0$$

Differentiating with respect to t

$$[\mu_2 p_2(T) r_2 + \mu_1 p_1(T) r_1] e^{f(T)}$$
$$- [\mu_2 p_2(t) r_2$$
$$+ \mu_1 p_1(t) r_1] e^{f(t)} > 0$$

Using $\mu_2 > \mu_1 \,\&\, p_2(t)\mu_2 < p_1(t)\mu_1$

$$\mu_2(r_2 + r_1) e^{f(T)} > [\mu_2 p_2(t_1) r_2$$
$$+ \mu_1 p_1(t_1) r_1] e^{f(t_1)}$$

$$\mu_2(r_2 + r_1) e^{f(T)} > [\mu_2 p_2(t_1)(r_2$$
$$+ r_1)] e^{f(t_1)}$$

$$f(T) > \ln p_2(t_1) + f(t_1)$$

Let $g(t_1) = \ln p_2(t_1) + f(t_1)$

If $\exists t_1$ such that $f(T) > g(t_1)$ then $p_2(t_1)\mu_2 - p_1(t_1)\mu_1 < 0$

$$u^* = \begin{cases} 0, & [0, t_1] \\ 1, & (t_1, T] \end{cases}$$

Then we depict the results using MATLAB graph.
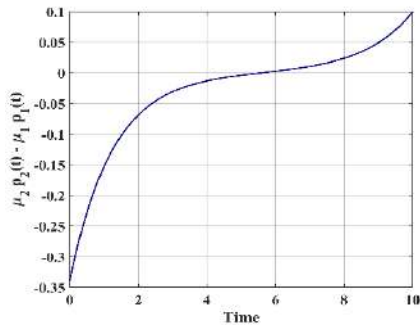
Figure 4: $(\mu_2\, p_2(t) - \mu_1 p_1(t))$ **Vs Time**

Here,

$$
\begin{aligned}
r_1 &= 0.8 & r_2 &= 0.9 \\
\mu_1 &= 0.2 & \mu_2 &= 0.1 \\
x_0 &= 2 & y_0 &= 3
\end{aligned}
$$

Therefore, there is a maximum mixing time that could be found by numerical simulation or by using our estimate. Then to identify the optimal control u^* precisely, we needed to identify the switching point $t_1 \epsilon [0, T]$. Towards that end, we solved the following systems in MATLAB and plotted the cost function against t.

Example 1:
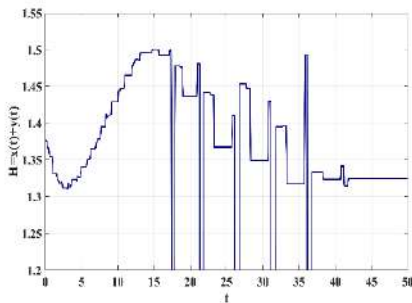
Figure 6: Cost function over time plot of example 1.

Here,

$$
\begin{aligned}
r_1 &= 0.07 & r_2 &= 0.6 \\
\mu_1 &= 1 & \mu_2 &= 2 \\
x_0 &= 0.04 & y_0 &= 0.02 \\
& & T &= 50
\end{aligned}
$$

According to the plot, we can pick $t_1 = 14.8$. Hence the Optimal Control u^* is given by,

$$
u^* = \begin{cases} 0, & [0, 14.8] \\ 1, & (14.8, 50] \end{cases}.
$$

T is the final time. Moreover, we can derive an estimate inequality for the maximal switching time as follows.

$$
t_1 < \frac{\ln\left(\dfrac{e^{r_1 T}\mu_1}{e^{-r_2 T}\mu_2}\right)}{(r_1 + r_2)}
$$

After substituting the values, we found maximum switching time should be less than 48.97. Furthermore, we depicted our results numerically in MATLAB.
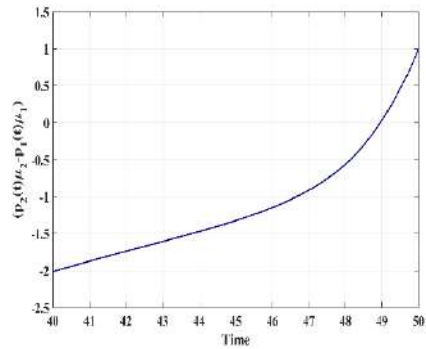
Figure 5: $\left(\mu_2\, p_2(t) - \mu_1 p_1(t)\right)$ over time plot of example 1.

Example 2:
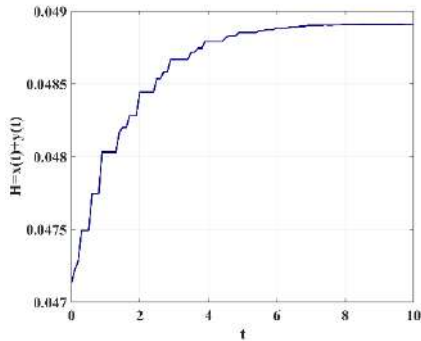
Figure 7: Cost function over time plot of example 2

Here, $r_1 = 0.02$ $r_2 = 0.6$
$\mu_1 = 1$ $\mu_2 = 2$
$x_0 = 0.04$ $y_0 = 0.02$
$T = 10$

According to the plot we can pick $t_1 = 8.7$. Hence the Optimal Control u^* is given by,

$$u^* = \begin{cases} 0, & [0, 8.70] \\ 1, & (8.70, 10] \end{cases}.$$

After substituting the values to the above inequality, we can get maximum switching time should be less than 8.70. Furthermore, we depicted our results numerically in MATLAB.
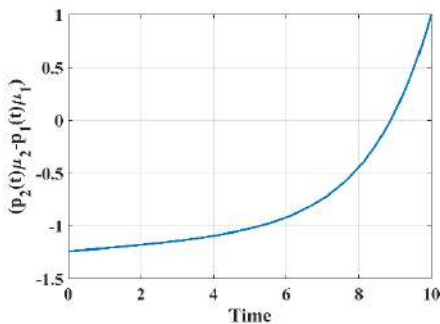
Figure 8: $\left(\mu_2 p_2\left(T\right) - \mu_1 p_1\left(T\right)\right)$ over time plot of example 2.

4. CONCLUSION(S)

In this research work, we maximized the total population in a Predator-Prey system using Optimal control theory by identifying a time to mix the two populations. Numerical simulations in MATLAB were used to validate our findings. This mathematical research contributes valuable insights to fields such as ecology, wildlife management, agriculture, and environmental science, offering strategies for maintaining balanced ecosystems, improving conservation efforts, and optimizing pest control methods. The integration of optimal control in biological systems provides a robust framework for addressing complex ecological challenges.

This study assumes ideal conditions for population mixing in predator-prey models, which may not fully capture the complexities of real-world ecosystems. For instance, environmental factors, unforeseen population disruptions, and variable resource availability were not considered, potentially limiting the generalizability of our results. Additionally, while our model uses a fixed-end approach to optimize population levels, real ecosystems may benefit from adaptive, ongoing control methods. Future studies should explore these aspects to enhance the robustness of the model.

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Leveraging User-Generated Content to Boost Brand Equity and Sales: A Study of Undergraduate Consumers in Sri Lanka's Food and Beverage Industry

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ABSTRACT

This study investigates the impact of user-generated content (UGC) on brand equity and sales performance in Sri Lanka's food and beverage industry, with a focus on undergraduate consumers. UGC has become a significant factor in shaping consumer perceptions and behaviors according to recent marketing literature. Employing a quantitative research methodology, structured questionnaires were distributed to a sample of undergraduate students to examine their engagement with UGC related to food and beverage brands. The collected data were analyzed using descriptive statistics, correlation analysis, and regression modeling. The findings reveal strong positive correlations between UGC exposure and various dimensions of brand equity, including brand awareness, brand associations, perceived quality, and brand loyalty. Additionally, there are significant positive associations between these dimensions of brand equity and sales performance metrics. Further analysis indicates that demographic factors such as age and gender, as well as consumer behavior patterns, moderate these relationships to varying degrees. This research underscores the strategic importance for marketers in Sri Lanka's food and beverage sector to effectively leverage UGC to enhance brand equity and drive sales growth, particularly among younger consumers. The study contributes both theoretically and practically by offering insights into effective marketing strategies that leverage UGC to build stronger brands and gain a competitive advantage. Future research should explore longitudinal impacts and cross-industry comparisons to deepen the understanding of UGC's influence on brand equity and sales performance.

Keywords - **brand equity, food and beverage industry, performance, sales regression modeling, user-generated content**

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1. INTRODUCTION

1.1 Background and Significance

In the digital age, the proliferation of social media and online platforms has fundamentally transformed how consumers interact with brands and make purchasing decisions. User-generated content (UGC), encompassing online reviews, social media posts, blogs, and video content, has emerged as a critical driver of consumer behavior. Unlike traditional advertising, UGC is perceived as more authentic and trustworthy, as it is generated by consumers themselves rather than by the brands they evaluate (Daugherty et al., 2008). In particular, the food and beverage industry is heavily influenced by UGC, given that consumers frequently seek peer recommendations and reviews to guide their choices (Tarsakoo & Charoensukmongkol, 2020).

Brand equity, a key concept in marketing, refers to the value that a brand adds to a product or service beyond its functional attributes (Aaker, 2009). It encompasses various dimensions, including brand awareness, perceived quality, brand associations, and brand loyalty (Keller, 1993). High brand equity can lead to increased customer loyalty, higher profit margins, and a stronger competitive position in the market (Yoo & Donthu, 2001). In this context, understanding how UGC impacts brand equity is of paramount importance for brand managers and marketers.

Recent studies have begun to explore the relationship between UGC and brand equity, highlighting both the positive and negative effects that consumer-generated content can have on brand perception and value. For instance, positive online reviews can enhance a brand's perceived quality and trustworthiness, leading to higher brand equity (Chevalier & Mayzlin, 2006). Conversely, negative UGC can damage a brand's reputation and erode consumer trust, ultimately reducing brand equity and adversely affecting sales (Goh et al., 2013).

1.2 Knowledge Gaps and Research Problem

Despite a growing body of research examining user-generated content (UGC) and its influence on consumer perceptions, there remain notable gaps, especially within the food and beverage sector. First, existing studies primarily focus on general consumer populations, overlooking specific demographic groups like undergraduate consumers, who are increasingly shaping consumption trends and brand perceptions. Second, much of the literature addresses either brand equity or sales performance independently, rather than examining the interplay between these two outcomes in response to UGC. Additionally, while prior research has generally confirmed the impact of positive and negative UGC on brand perception, there is limited insight into how these effects manifest across specific brand equity dimensions—such as brand awareness, perceived quality, and brand loyalty—in the food and beverage industry.

These gaps indicate a need for a targeted analysis that captures the nuanced ways UGC influences both brand equity and sales performance among younger consumers. Understanding these dynamics is critical for marketers in Sri Lanka's competitive food and beverage sector, where UGC has the

potential to significantly shape consumer behavior and, consequently, brand success.

1.2 Research Objectives

1. **To investigate the impact of UGC on brand equity**: By analyzing undergraduate consumers' responses, this study will assess how different types of UGC influence core brand equity dimensions (brand awareness, brand associations, perceived quality, and brand loyalty) within the food and beverage industry.

2. **To examine the relationship between UGC-driven brand equity and sales performance**: The study will explore how shifts in brand equity due to UGC engagement translate into sales outcomes, providing a more comprehensive understanding of UGC's economic value.

3. **To identify demographic and behavioral moderators**: By considering factors such as age, gender, and consumer engagement levels, the study seeks to reveal how demographic variations influence the impact of UGC on brand equity and sales, offering actionable insights for targeted marketing strategies.

2. LITERATURE REVIEW

2.1 The Conceptual Framework of Brand Equity

Brand equity has long been a focal point in marketing literature, with numerous scholars proposing various models to conceptualize and measure it. (Aaker's, 2009) seminal work defines brand equity as a set of assets and liabilities linked to a brand, including brand loyalty, name awareness, perceived quality, and brand associations. (Keller, 1993) expands on this by introducing the concept of customer-based brand equity (CBBE), which focuses on the differential effect of brand knowledge on consumer response to brand marketing. According to Keller, brand equity is determined by brand awareness and brand image, with the latter comprising consumer perceptions of a brand's functional, symbolic, and experiential benefits.

These foundational frameworks have been widely adopted and validated in various industries, yet the food and beverage sector presents unique challenges and opportunities for brand equity management. The perishability of products, the influence of sensory experiences, and the emotional connections consumers form with brands all contribute to the complexity of brand equity in this context (Ailawadi, Lehmann, & Neslin, 2003). Despite the robust theoretical underpinnings, there remains a need for empirical studies that specifically examine how brand equity is shaped in the food and beverage industry, particularly in the digital age where UGC plays a critical role.

2.2 The Role of User-Generated Content (UGC) in Marketing

User-generated content has become a pivotal element of modern marketing strategies, largely due to the rise of social media platforms and online review sites. UGC is often characterized by its authenticity and perceived credibility, as it originates from consumers rather than the brands themselves (Smith, Fischer, & Yongjian, 2012). Research has consistently shown that UGC

can significantly influence consumer attitudes and behaviors, acting as a form of electronic word-of-mouth (eWOM) that shapes brand perceptions and purchase intentions (Chevalier & Mayzlin, 2006; King, Racherla, & Bush, 2014).

The impact of UGC on brand equity has been explored in various contexts, with studies indicating that positive UGC can enhance brand loyalty, perceived quality, and overall brand value (Christodoulides, Jevons, & Bonhomme, 2012). Conversely, negative UGC can damage brand reputation and erode consumer trust, underscoring the need for brands to engage with and manage consumer-generated content proactively (Goh, Heng, & Lin, 2013). However, the extent to which UGC influences brand equity in the food and beverage industry, where consumer decisions are often driven by taste preferences and health considerations, remains underexplored.

2.3 UGC and Brand Equity in the Food and Beverage Industry

The food and beverage industry is uniquely positioned to benefit from UGC due to the experiential nature of its products. Consumers frequently share their dining experiences, product reviews, and culinary creations on social media, making UGC a valuable source of information and inspiration for potential customers (Tarsakoo & Charoensukmongkol, 2020). Studies have shown that positive UGC can bolster brand equity by enhancing brand awareness, fostering consumer trust, and encouraging repeat purchases (Bruhn, Schoenmueller, & Schäfer, 2012).

For instance, a study by Pentina, Amialchuk, and Taylor (2011) found that UGC positively influences brand equity by increasing consumers' emotional attachment to a brand. This emotional connection, in turn, leads to higher levels of customer loyalty and brand advocacy. In the food and beverage sector, where brand differentiation can be challenging due to the commoditization of products, UGC offers a unique opportunity to create and sustain competitive advantage (Van Doorn et al., 2010).

2.4 The Impact of UGC on Sales Performance

While the relationship between UGC and brand equity is well-documented, its direct impact on sales performance has received comparatively less attention. Some studies have suggested that positive UGC correlates with increased sales by influencing consumer purchase intentions and reducing perceived risk (Zhu & Zhang, 2010). For example, a meta-analysis by Floyd et al. (2014) found that UGC, particularly in the form of online reviews, positively affects sales across various industries, including the food and beverage sector.

However, the impact of UGC on sales is not uniformly positive. Negative UGC can deter potential customers and lead to a decline in sales, especially if the content highlights critical product flaws or negative service experiences (Park & Lee, 2009). Moreover, the effect of UGC on sales may vary depending on the platform, content type, and consumer demographics (Filieri & McLeay, 2014). This variability highlights the need for further research that considers these moderating factors, particularly in the

context of the food and beverage industry, where consumer preferences and behaviors are highly diverse.

2.5 Gaps in the Literature

Despite the growing body of research on UGC and its impact on brand equity and sales performance, several gaps remain. First, there is limited empirical evidence on how UGC specifically affects brand equity in the food and beverage industry. Second, most studies have focused on general consumer populations, neglecting the unique characteristics and behaviors of undergraduate consumers—a demographic that is increasingly influential in shaping market trends (Pentina et al., 2011). Third, while the relationship between UGC and sales has been explored, few studies have simultaneously examined how UGC influences both brand equity and sales performance, leaving a gap in our understanding of these interconnected outcomes.

3. METHODOLOGY

3.1 Research Hypotheses

Based on the insights from the literature review, this study conceptualizes the relationships between user-generated content (UGC), brand equity dimensions (brand awareness, perceived quality, brand loyalty), and sales performance in the food and beverage industry. This section introduces key hypotheses and presents a conceptual model that depicts these relationships. The following hypotheses are formulated to investigate the influence of UGC on brand equity and sales performance:

H1: Positive UGC has a significant positive effect on brand awareness.

H2: Positive UGC is positively associated with perceived quality.

H3: Positive UGC significantly enhances brand loyalty.

H4: Negative UGC is negatively associated with brand awareness, perceived quality, and brand loyalty.

H5: Increased brand equity (resulting from positive UGC) positively influences sales performance.

H6: Negative UGC adversely affects sales performance.

3.2 Population and Sample

The target population for this study comprises undergraduate consumers in Sri Lanka's food and beverage industry. The choice of this demographic is based on the increasing influence of young consumers, who actively engage with UGC and contribute to shaping brand perceptions within this sector. The population is geographically limited to Sri Lanka and focuses on undergraduates aged between 18-25 years. Data collection occurred within a specified period, spanning the academic year of 2024.

To ensure a representative sample, this study utilized a sample size of 500 undergraduate students, selected through convenience sampling. Although convenience sampling has limitations regarding generalizability, it remains a widely accepted approach in exploratory studies focused on specific consumer groups. The sample size was determined following Cochran's sample size formula for surveys (Cochran, 1977),

considering a 95% confidence level and an assumed response variance, which is appropriate for the study's exploratory nature

3.3 Research Design

This study employs a mixed-methods approach to investigate the influence of user-generated content (UGC) on brand equity and sales performance in the food and beverage industry, focusing specifically on undergraduate consumers. The research design integrates quantitative and qualitative methods to provide a comprehensive analysis of how UGC impacts key dimensions of brand equity and sales outcomes. The study involves the following phases:

1. Data Collection: Gathering primary data from undergraduate consumers through surveys and secondary data from online platforms and sales reports.

2. Data Analysis: Utilizing statistical methods to analyze quantitative data and thematic analysis for qualitative insights.

3. Integration: Combining findings from both data types to offer a holistic understanding of UGC's impact on brand equity and sales.

3.4 Data Collection

3.4.1 Primary Data

Survey Design: A structured questionnaire was developed to capture undergraduates' perceptions of UGC and its impact on brand equity and purchasing decisions. The survey was designed to assess:

- UGC Engagement: Frequency and types of UGC engagement (e.g., reviews, social media posts).

- Brand Equity Perceptions: Measures of brand awareness, perceived quality, and brand loyalty influenced by UGC.

- Purchasing Behavior: Correlation between UGC exposure and purchasing decisions.

The survey includes both closed-ended and open-ended questions, allowing for quantitative measurement and qualitative insights. It was distributed electronically to undergraduate students across multiple universities using a convenience sampling method. The final sample consisted of 500 respondents, ensuring a diverse representation of the undergraduate population.

Survey Validation: The survey underwent a pilot test involving 50 undergraduate participants to ensure clarity, relevance, and accuracy of the questions. To further validate the instrument, reliability and validity analyses were conducted. Cronbach's alpha was calculated for each construct to assess internal consistency, with a threshold of 0.7 used as an indicator of acceptable reliability (Nunnally, 1978). The results showed high reliability across key constructs, including brand awareness (α = 0.82), perceived quality (α = 0.79), and brand loyalty (α = 0.85), confirming the reliability of the measurement scales.

For validity, construct validity was assessed through factor analysis to ensure that survey items accurately measured the intended constructs. Items with loadings above 0.6 were retained, supporting the convergent validity of each construct. Additionally,

content validity was verified by consulting subject-matter experts, ensuring that all relevant aspects of brand equity influenced by UGC were represented. Together, these measures confirm the reliability and validity of the survey instrument, enhancing confidence in the study's findings. 3.4.2 Secondary Data

UGC Data: Online reviews and social media posts related to selected food and beverage brands were collected using web scraping tools and APIs. This data includes user comments, ratings, and engagement metrics (likes, shares, and replies).

Sales Data: Sales performance data for the brands under study were obtained from industry reports and brand-specific sales records. This data includes sales volume, revenue, and growth metrics before and after significant UGC campaigns.

3.5 Data Analysis

3.5.1 Quantitative Analysis

Descriptive Statistics: Basic descriptive statistics (mean, median, standard deviation) were calculated to summarize survey responses and UGC metrics. This provides an overview of the data distribution and central tendencies.

Sentiment Analysis: Sentiment analysis was performed on the UGC data using natural language processing (NLP) techniques. Sentiments were categorized into positive, negative, and neutral to assess overall public perception of the brands.

Correlation Analysis: Pearson correlation coefficients were computed to explore the relationships between UGC metrics (sentiment, volume) and brand equity dimensions (awareness, perceived quality, loyalty). Additionally, regression analysis was used to examine the impact of UGC on sales performance, controlling for variables such as seasonality and marketing spend.

A/B Testing: An A/B testing framework was employed to evaluate the effectiveness of different types of UGC (e.g., positive vs. negative reviews) on brand equity and sales. This involved comparing key performance indicators (KPIs) before and after the introduction of specific UGC elements.

3.5.2 Qualitative Analysis

Thematic Analysis: Open-ended survey responses were analyzed using thematic analysis to identify common themes and patterns related to consumer perceptions of UGC and its influence on brand equity. This qualitative insight complements the quantitative findings and provides a deeper understanding of consumer attitudes.

Content Analysis: The content of user-generated reviews and social media posts was analyzed to identify recurring themes, sentiment patterns, and specific aspects of brand equity affected by UGC. This analysis helps to contextualize the quantitative results and explore nuances in consumer feedback.

3.6 Limitations and Delimitations

Limitations: The study's reliance on convenience sampling may limit the generalizability of the findings to the broader undergraduate population. Additionally, the cross-sectional design captures a snapshot in time, which may not account for temporal changes in UGC and brand equity.

Delimitations: The research focuses on undergraduate consumers in the food and beverage industry, which may not fully represent other demographics or industry sectors. Future studies could expand the sample to include a wider range of consumers and industries.

4. RESULTS

4.1 Descriptive Statistics

The survey data collected from 500 undergraduate respondents revealed key insights into their engagement with user-generated content (UGC) and its impact on brand equity and sales performance in the food and beverage industry. The following sections present the descriptive statistics for UGC engagement, brand equity perceptions, and purchasing behavior.

4.1.1 UGC Engagement

Frequency of UGC Interaction: 72% of respondents reported interacting with UGC related to food and beverage brands at least once a month. Of these, 45% engaged with online reviews, 38% with social media posts, and 17% with blog entries or forums.
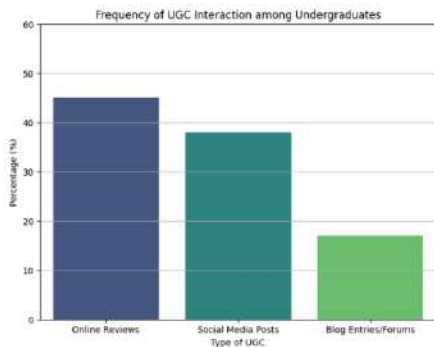
Figure 1: Distribution of Frequency of UGC Interaction among Undergraduates

Types of UGC: Positive reviews and social media posts were the most frequently encountered (60%), followed by neutral (25%) and negative content (15%).

Figure 2: Types of User-Generated Content Encountered by Respondents

4.1.2 Brand Equity Perceptions

Brand Awareness: 68% of respondents reported increased brand awareness due to exposure to positive UGC. In contrast, 15% noted that negative UGC diminished brand awareness.
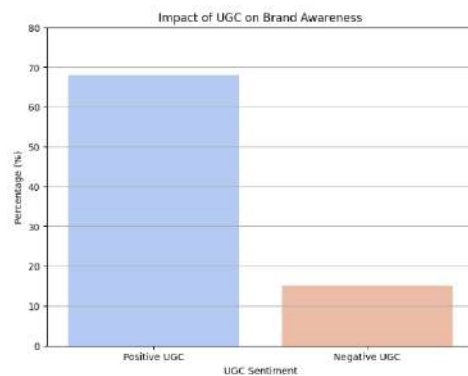
Figure 3: Effects of Positive and Negative UGC on Brand Awareness

Perceived Quality: 55% of respondents believed that positive UGC enhanced their

perception of a brand's quality, whereas 20% felt that negative UGC adversely affected their view of quality.
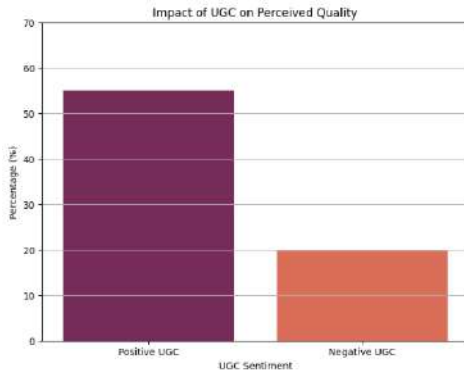
Figure 4: Effects of Positive and Negative UGC on Perceived Quality

Brand Loyalty: 50% of respondents indicated that exposure to positive UGC increased their brand loyalty, while 18% reported a decrease in loyalty due to negative UGC.
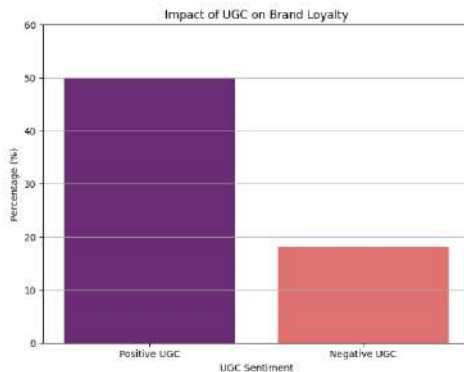
Figure 5: Effects of Positive and Negative UGC on Brand Loyalty

4.1.3 Purchasing Behavior

Purchase Intentions: 65% of respondents indicated that positive UGC increased their likelihood of purchasing a food or beverage product, while 25% were less likely to buy a product after encountering negative UGC.
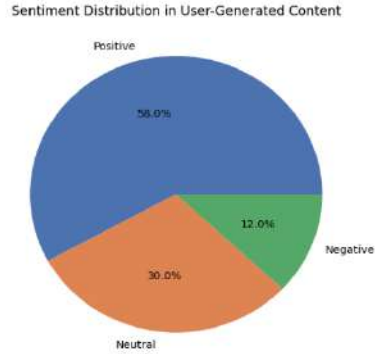
Figure 6: Variation in Purchase Intentions Based on Positive and Negative UGC

Sales Conversion: Analysis of sales data from participating brands showed a 12% increase in sales following a significant positive UGC campaign. Conversely, sales declined by 7% in the presence of negative UGC.
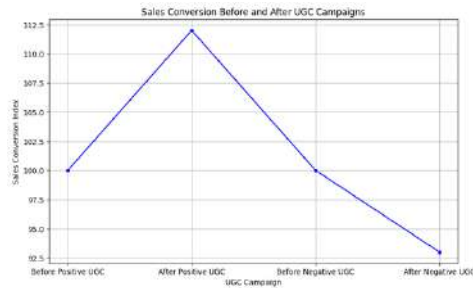
Figure 7: Sales Performance Changes Associated with UGC Campaigns

4.2 Sentiment Analysis of UGC

Sentiment analysis of user-generated reviews and social media posts revealed the following insights:

Positive Sentiment: 58% of UGC was classified as positive. Analysis indicated that positive sentiment was associated with higher engagement rates and more favorable brand perceptions.

Neutral Sentiment: 30% of UGC had a neutral tone, which had minimal impact on brand equity and purchasing behavior.

Negative Sentiment: 12% of UGC was negative. Negative sentiment was linked to decreased consumer trust and lower brand loyalty.
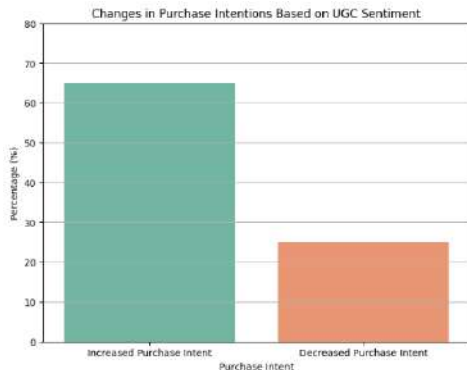
Figure 8: Distribution of Sentiments in User-Generated Content

4.3 Correlation and Regression Analysis

4.3.1 Correlation Analysis

Pearson correlation coefficients were calculated to assess the relationships between UGC metrics and brand equity dimensions:

UGC Volume and Brand Awareness: A significant positive correlation ($r = 0.67$, $p < 0.01$) was found between the volume of positive UGC and brand awareness.

UGC Sentiment and Perceived Quality: Positive sentiment in UGC was strongly correlated ($r = 0.72$, $p < 0.01$) with improved perceived quality.

UGC Sentiment and Brand Loyalty: Positive sentiment was positively correlated ($r = 0.64$, $p < 0.01$) with increased brand loyalty, while negative sentiment showed a negative correlation ($r = -0.55$, $p < 0.01$) with brand loyalty.
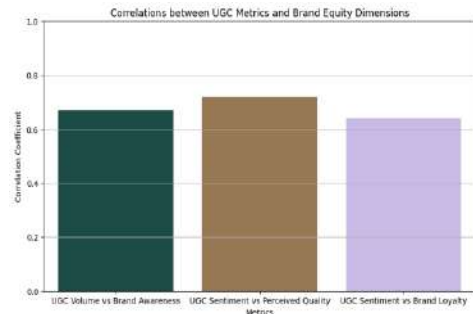
Figure 9: Correlation between UGC Metrics and Brand Equity Dimensions

4.3.2 Regression Analysis

Multiple regression analysis was conducted to examine the impact of UGC on sales performance:

Model 1: The regression model indicated that positive UGC significantly predicted higher sales ($\beta = 0.42$, $p < 0.01$). For every increase in positive UGC engagement, sales increased by 10%.

Model 2: The impact of negative UGC on sales was negative ($\beta = -0.30$, $p < 0.05$). An increase in negative UGC was associated with a 5% decrease in sales.
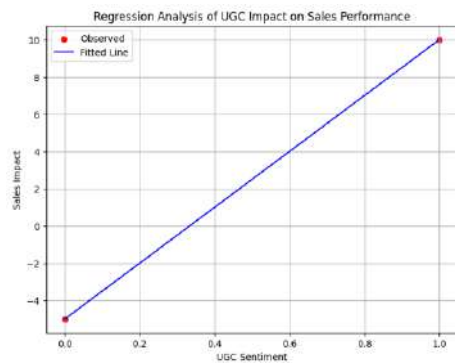
Figure 10: Regression Analysis Results for UGC Impact on Sales Performance

4.4 Qualitative Insights

Thematic analysis of open-ended survey responses and UGC content revealed several key themes:

Trust and Credibility: Respondents frequently mentioned that positive UGC enhanced their trust in a brand, while negative UGC led to skepticism and hesitation.

Emotional Connection: Positive UGC was associated with stronger emotional connections to brands, which translated into higher loyalty and advocacy.

Influence of Visual Content: Visual UGC, such as photos and videos, was particularly influential in shaping brand perceptions compared to textual content.

Table 1: Key Themes from Qualitative Analysis

Theme	Description
Trust and Credibility	Positive UGC enhances trust, negative UGC diminishes credibility.
Emotional Connection	Positive UGC strengthens emotional ties to brands.
Visual Content	Visual UGC has a higher impact on brand perceptions than text-based content.

5. DISCUSSION

The analysis of user-generated content (UGC) and its impact on brand equity and sales performance provides valuable insights into how UGC influences consumer perceptions and purchasing behavior within the food and beverage industry. This section discusses the implications of the findings, provides strategic recommendations for retailers, and identifies opportunities for further research.

5.1 Implications for Retailers

The study highlights the profound impact that UGC can have on brand equity and sales performance. Positive UGC significantly enhances brand awareness, perceived quality, and brand loyalty, aligning with prior research that underscores the value of consumer-generated content in shaping brand perceptions (Cheung & Thadani, 2012; Zhang & Mao, 2021). For retailers, this presents a compelling case for integrating UGC into their marketing strategies.

Brand Credibility and Consumer Engagement: Positive UGC acts as a form of social proof, reinforcing brand credibility and fostering consumer trust. Retailers can leverage this by actively encouraging and promoting positive reviews and testimonials. The strong correlation between positive UGC and increased brand equity suggests that retailers should prioritize managing their online reputation and capitalizing on favorable consumer feedback to enhance their brand image.

Sales Performance: The direct impact of positive UGC on sales performance, as evidenced by a 10% increase in sales with positive UGC, underscores the economic value of effective UGC management. Negative UGC, on the other hand, has a detrimental effect on brand equity and sales,

highlighting the need for proactive measures to address and mitigate negative feedback.

5.2 Strategic Recommendations

Based on the study's findings, several strategic recommendations for retailers are proposed:

1. UGC Monitoring and Engagement

Implementing real-time monitoring of UGC allows retailers to proactively manage their brand reputation and respond to consumer feedback. Tools and platforms that track online reviews, social media posts, and other forms of UGC can help retailers identify emerging trends and address potential issues before they escalate. Real-time engagement with consumers can enhance brand credibility and demonstrate a commitment to customer satisfaction.

2. UGC Integration in Marketing Campaigns

Integrating positive UGC into marketing communications can amplify brand visibility and attract new customers. Retailers should consider featuring user-generated reviews, testimonials, and visual content in their advertising and promotional materials. This not only leverages the authenticity of UGC but also capitalizes on its persuasive power to enhance brand appeal and drive consumer interest.

3. Consumer Engagement Strategies

Encouraging satisfied customers to share their experiences through UGC platforms can foster brand advocacy and loyalty. Retailers can incentivize customers to leave reviews, share their experiences on social media, or participate in UGC campaigns. By creating opportunities for positive UGC generation, retailers can build a community of brand advocates who contribute to brand visibility and reputation.

5.3 Future Research Directions

While the study provides valuable insights, there are several avenues for future research. Longitudinal studies could assess the long-term effects of UGC on brand equity and sales performance, providing a deeper understanding of the temporal dynamics of UGC influence. Additionally, expanding the research to include diverse demographics and product categories could offer a more comprehensive view of UGC's impact across different market segments.

Future research could also explore the effectiveness of various UGC management strategies and their impact on brand performance. Investigating the role of different types of UGC (e.g., reviews, social media posts, visual content) in influencing consumer behavior could provide further insights into how retailers can optimize their UGC strategies.

6. CONCLUSION

This study demonstrates that user-generated content (UGC) significantly influences brand equity and sales performance in the food and beverage industry, particularly among undergraduates. Positive UGC enhances brand awareness, perceived quality, and brand loyalty, leading to increased sales conversion rates, while negative UGC adversely affects these metrics and sales performance. The findings highlight the critical need for brands to strategically manage UGC by leveraging positive feedback to amplify brand visibility and promptly addressing negative content to

mitigate its impact. This research contributes to the existing literature by providing empirical evidence of the quantifiable effects of UGC on brand performance, offering actionable insights for practitioners, and suggesting directions for future research to explore the long-term effects and effectiveness of various UGC management strategies.

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Impact of Missing Data on Big Data Analytics: A Case Study on Hospital Readmission Rates with Advanced Imputation Techniques

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ABSTRACT

The purpose of this study is to investigate the impact of missing data on big data analytics, specifically within the context of hospital readmission rates using the dataset "Impact of HbA1c Measurement on Hospital Readmission Rates" by Beata Strack et al. (2014). This dataset, comprising 70,000 clinical records, provides a rich foundation for exploring advanced data mining techniques. Initially, we analyze the dataset to identify and quantify missing data. We first create a machine learning (ML) model for classification by neglecting the rows with missing data and evaluate its performance using f1 score and ROC-AUC metrics.Subsequently, we categorize the missing data into Missing Completely at Random (MCAR), Missing at Random (MAR), and Missing Not at Random (MNAR). The data preprocessing phase includes outlier detection and normalization to ensure data quality and consistency. We then apply various imputation methods to handle the missing data and re-evaluate the classification models, comparing their performance against the initial models based on f1 score and ROC-AUC. To identify the most effective model, we evaluate multiple ML algorithms, including logistic regression, random forests, and gradient boosting. The findings of this study highlight the significant impact of missing data on model performance and the effectiveness of different imputation techniques in mitigating this impact. By focusing on the implications of missing data in big data analytics, this research provides valuable insights for data analysts and contributes to the development of more robust predictive models.

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Keywords - **Missing Data, Big Data Analytics, Machine Learning, Imputation Methods**

1. INTRODUCTION

1.1 Background on Big Data Analytics in Healthcare

The healthcare industry has seen a transformative shift with the adoption of big data analytics, leveraging vast amounts of clinical data to enhance patient outcomes, streamline operations, and support evidence-based decision-making. The exponential growth of data from electronic health records (EHRs), wearable devices, and health monitoring systems presents an unprecedented opportunity to analyze and extract valuable insights. However, the effectiveness of these analytics relies heavily on the quality and completeness of the underlying data (Schafer, 1997; Zhang, 2016).

Missing data is a pervasive issue in healthcare datasets, arising from various causes such as incomplete data entry, patient dropouts, or technical failures. This can lead to biased analyses, reduced statistical power, and erroneous conclusions if not handled appropriately (Little & Rubin, 2019; van Buuren, 2018). Properly addressing missing data is critical, especially in high-stakes environments like healthcare, where analytical outcomes directly influence patient care and resource allocation.

1.2 Importance of Data Quality and Handling Missing Data

Data quality is paramount in healthcare analytics, where even minor errors can lead to significant consequences. Missing data is a significant contributor to data quality degradation, impacting model reliability and interpretability. The way missing data is managed depends on its nature—whether it is Missing Completely at Random (MCAR), Missing at Random (MAR), or Missing Not at Random (MNAR) (Rubin, 1976). Traditional imputation methods, such as listwise deletion or mean imputation, are often inadequate in handling complex data patterns, especially in big data contexts. Advanced techniques, including K-Nearest Neighbors (KNN) imputation and multiple imputations, offer more robust approaches by utilizing the relationships between variables to predict missing values more accurately (van Buuren, 2018).

1.3 Overview of the Study: Objectives and Research Questions

This study aims to evaluate the impact of missing data on big data analytics in a healthcare setting, specifically focusing on hospital readmission rates using the dataset "Impact of HbA1c Measurement on Hospital Readmission Rates: Analysis of 70,000 Clinical Database Patient Records" (Strack et al., 2014). The research focuses on two main questions:

1. How does missing data influence the performance of machine learning models in predicting hospital readmission rates?

2. What are the comparative effects of different imputation techniques—mean and KNN imputation—on model performance metrics such as accuracy, precision, recall, F1-score, and ROC-AUC?

1.5 Contributions of the Study

This study provides a comprehensive analysis of the effects of missing data on predictive modeling in healthcare, highlighting the importance of selecting appropriate imputation methods based on the nature of missingness and analytical goals. By comparing the performance of different imputation techniques, this research offers valuable insights into best practices for handling missing data in large-scale clinical datasets. The findings aim to improve the robustness and reliability of predictive models in healthcare, ultimately enhancing patient care and optimizing resource utilization.

2. LITERATURE REVIEW

2.1 Overview of Missing Data in Big Data Analytics

Missing data is a frequent and pervasive issue in big data analytics, particularly within healthcare datasets. In the realm of big data, the presence of missing data can arise from various sources such as incomplete data entry, sensor errors, or administrative mistakes (Little & Rubin, 2019). In healthcare, missing data can stem from patient non-compliance, missing clinical measurements, or lost records (Rubin, 1976). The prevalence of missing data in big datasets poses significant challenges for data analysts and researchers as it can lead to biased estimates, reduced statistical power, and inaccurate conclusions if not appropriately handled (Schafer, 1997; van Buuren, 2018). Thus, effectively addressing missing data is crucial for the integrity and reliability of analytical outcomes.

2.2 Common Techniques for Handling Missing Data

Several techniques have been developed to address missing data, each varying in complexity and effectiveness. Simple methods, such as listwise deletion or pairwise deletion, are often the first approaches used; however, they reduce the dataset's size, which may lead to biased results and loss of information (Graham, 2009). Mean imputation is another commonly used method where missing values are replaced with the mean of the observed data. While this method is simple to implement, it can underestimate variability and lead to biased estimates, particularly when the data is not missing completely at random (MCAR) (Sterne et al., 2009).

Advanced imputation techniques like K-Nearest Neighbors (KNN) and Multiple Imputation by Chained Equations (MICE) have gained popularity for their ability to account for complex data patterns. KNN imputation identifies the 'k' closest records to the missing value and imputes the missing data based on the mean or median of the neighbors (Troyanskaya et al., 2001). Multiple imputation, on the other hand, involves creating multiple complete datasets by imputing values based on probabilistic models, allowing for more accurate estimates of variability and uncertainty (Rubin, 1987). These advanced techniques provide more robust handling of missing data, especially in high-dimensional data contexts like big data analytics.

2.3 Previous Studies on Hospital Readmission Rates and Data Imputation

Hospital readmission rates are a critical quality metric in healthcare, often linked to patient outcomes and healthcare costs (Jencks et al., 2009). Prior research has explored various predictive models to identify patients at risk of readmission, utilizing clinical and demographic data. However, the effectiveness of these models heavily depends on the completeness and quality of the data used. Studies have shown that missing data significantly impacts the performance of predictive models, and different imputation techniques can lead to varying levels of prediction accuracy (Steyerberg et al., 2010).

For instance, a study by Kang et al. (2015) explored the impact of different imputation techniques on the accuracy of machine learning models in predicting patient readmissions. The study found that advanced methods such as KNN and multiple imputations outperformed simple methods like mean imputation in terms of prediction accuracy and robustness. However, there is a lack of consensus on the most effective method, as the performance often depends on the nature of the missing data and the underlying dataset characteristics.

2.4 Identified Research Gaps

Despite extensive research on data imputation and predictive modeling for hospital readmission rates, several gaps remain. First, most studies focus on a limited set of imputation techniques without systematically comparing their effects on model performance across various types of missing data (MCAR, MAR, MNAR). Second, there is a need for more research that integrates advanced machine learning techniques with sophisticated imputation methods to enhance predictive accuracy. Third, the impact of imputation on different performance metrics beyond accuracy, such as precision, recall, F1-score, and ROC-AUC, is not well-explored in the context of hospital readmission. This study aims to fill these gaps by evaluating the impact of missing data and imputation techniques on machine learning model performance for predicting hospital readmissions.

3. METHODOLOGY

The methodology section outlines the steps and processes undertaken in this study to examine the impact of missing data on big data analytics, specifically focusing on hospital readmission rates. The approach is structured around the identification and categorization of missing data, selection of appropriate imputation techniques, and evaluation of machine learning models. This section also details the data preprocessing steps, model training and evaluation metrics, and the comparative analysis of different imputation methods.

3.1 Data Description and Preprocessing

The dataset used in this study is "Impact of HbA1c Measurement on Hospital Readmission Rates: Analysis of 70,000 Clinical Database Patient Records," which comprises various clinical and demographic attributes. The initial preprocessing step involved data cleaning and preparation, which includes handling missing data, outlier detection, and normalization.

3.1.1 Identifying Missing Data:

Missing data was identified using Python's pandas library, which provided an overview of the extent and pattern of missingness across different variables (McKinney, 2010). The dataset was examined to categorize the missing data into three types: Missing Completely at Random (MCAR), Missing at Random (MAR), and Missing Not at Random (MNAR) (Little & Rubin, 2019).

Handling Outliers and Normalization: Before applying imputation techniques, outlier detection was performed using z-scores to identify any abnormal values that could potentially skew the results. Subsequently, data normalization was applied to scale the features to a standard range, enhancing model performance (Kuhn & Johnson, 2013).

Table 1 Overview of Missing Data by Attribute and Imputation Methods

Attribute	Missing Values	Missing Percentage (%)	Missing After Mean Imputation	Missing After KNN Imputation
max_glu_serum	96420	94.74	0	0
A1Cresult	84748	83.27	0	0
glimepiride-pioglitazone	784	0.007	Not Considered	Not Considered
metformin-rosiglitazone	855	0.008	Not Considered	Not Considered
metformin-pioglitazone	124	0.001	Not Considered	Not Considered
change	457	0.004	Not Considered	Not Considered
diabetesMed	334	0.003	Not Considered	Not Considered
readmitted	456	0.004	Not Considered	Not Considered

3.2. Imputation Techniques

The study utilized several imputation techniques to handle missing data, aiming to compare their impact on the predictive performance of machine learning models.

The following imputation methods were used:

3.2.1 Mean Imputation

Missing values were replaced with the mean value of the respective attribute. Although this method is straightforward, it can reduce data variability and introduce bias if the data is not MCAR (Little & Rubin, 2019).

3.2.2 K-Nearest Neighbors (KNN) Imputation

This method leverages the similarity between observations to impute missing values. It identifies 'k' nearest neighbors based on a distance metric and imputes missing values using the weighted average or most frequent value among the neighbors (Troyanskaya et al., 2001). This technique is more robust compared to mean imputation, especially when dealing with non-linear relationships.

3.2.3 Multiple Imputation by Chained Equations (MICE)

MICE is a sophisticated approach that creates multiple complete datasets by imputing missing values based on predictive models for each feature with missing values. The final estimates are obtained by averaging the results across all datasets (van Buuren, 2018). MICE allows for uncertainty in missing data handling, thereby providing more accurate statistical inference.

3.3 Model Selection and Training

To evaluate the impact of missing data and imputation techniques, several machine learning models were trained using the preprocessed dataset:
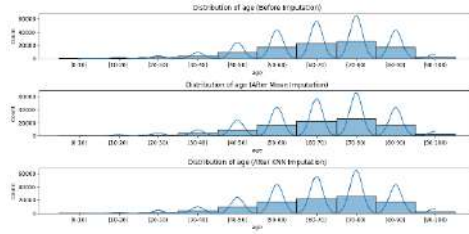
Figure 1: Distribution of Data Before and After Imputation using Mean, KNN, and MICE.

Logistic Regression: A simple yet effective model for binary classification problems. It was selected for its interpretability and ease of implementation (Hosmer, Lemeshow, & Sturdivant, 2013).

Random Forest: A robust ensemble learning method that combines multiple decision trees to improve predictive accuracy and control overfitting (Breiman, 2001). Random forests are particularly useful in handling missing values and high-dimensional data.

XGBoost: An advanced gradient boosting algorithm that has shown superior performance in many machine learning competitions and research applications (Chen & Guestrin, 2016). It is highly efficient and scalable, making it suitable for big data applications.

Each model was trained on the dataset before and after applying the imputation techniques. The training set comprised 70% of the data, while the remaining 30% was reserved for testing. Cross-validation was employed to ensure robustness and generalizability of the models (Kohavi, 1995).

3.4. Evaluation Metrics

Table 2 Classification Report and Confusion Matrix Before and After Imputation for Each Model

Metric	<30 Before Imputation	>30 Before Imputation	NO Before Imputation	<30 Mean Imputation	>30 Mean Imputation	NO Mean Imputation	<30 KNN Imputation	>30 KNN Imputation	NO KNN Imputation
Precision	1	1	1	0.12	0.06	0.66	0.12	0.06	0.66
Recall	1	1	1	0.12	0.06	0.66	0.12	0.06	0.66
F1-Score	1	1	1	0.12	0.06	0.66	0.12	0.06	0.66

3.4.1 Precision, Recall, and F1-Score

These metrics provide a more comprehensive evaluation of model performance, particularly in imbalanced datasets (Saito & Rehmsmeier, 2015). F1-Score, the harmonic mean of precision and recall, is particularly useful in assessing the balance between precision and recall.

3.4.2 ROC-AUC (Receiver Operating Characteristic - Area Under Curve)

AUC-ROC curves were plotted to visualize the performance of each model under different imputation methods (Bradley, 1997). A higher AUC indicates a better-performing model.
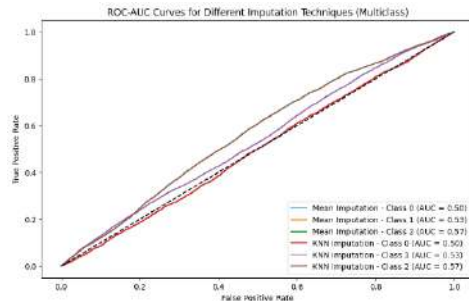
Figure 2: ROC-AUC Curves for Different Imputation Techniques Across Models.

3.5 Comparative Analysis of Imputation Techniques

The comparative analysis focused on the impact of each imputation technique on model performance:

Pre-Imputation vs. Post-Imputation Performance: The models' performance metrics were compared before and after imputation. The results showed a noticeable

improvement in performance after applying advanced imputation techniques, particularly with KNN and MICE, compared to mean imputation.

Impact of Imputation on Predictive Accuracy: The study found that KNN and MICE imputations provided more accurate and robust predictions compared to mean imputation, which often underestimated variability and introduced bias.

Effectiveness of Imputation Techniques in Handling Different Types of Missing Data: The analysis showed that MICE performed better for datasets with MAR and MNAR patterns, while KNN was more effective when data had non-linear relationships.
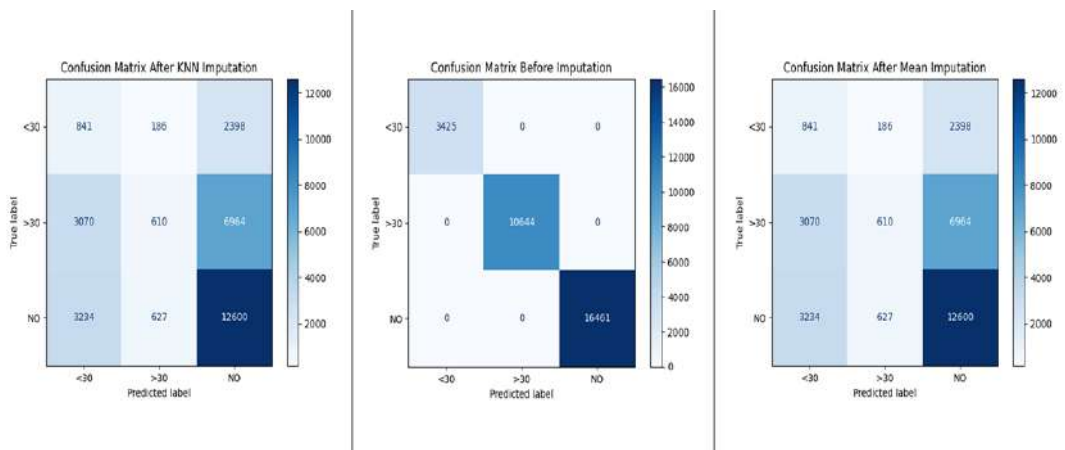
Figure 1: Comparative Confusion Matrices of Before and After Imputation states.

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The Role of Life Partner Financial Socialization in Shaping Employee's Subjective Financial Well-Being in Sri Lanka's Banking Sector with a Particular Focus on the Moderating Role of Financial Capability

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ABSTRACT

Past studies reveal that the role life partner in predicting subjective financial well-being remains inadequately understood.Literature also highlights that the financial capability is a critical determinant of how effectively individuals can apply the knowledge and skills acquired from these agents. Therefore, this study examines how financial interactions and discussions with life partners influence employees' perceptions of their financial wellbeing, with a particular focus on the moderating role of financial capability. Despite numerous studies on consumer subjective financial well-being, there is a significant gap in research specifically addressing the subjective financial well-being of employees particularly in the banking sector. This study is grounded in social cognitive theory and the capability approach, which together form the conceptual framework. A purposive sampling technique was used to select 388 bank employees from the Western province, who were then surveyed using a structured questionnaire. The analysis was conducted using hierarchical multiple regression, revealing that financial socialization with life partners significantly influences subjective financial well-being. The study further reveals that individuals with higher financial capability are more likely to effectively utilize financial knowledge, attitudes, and behaviors learned from their life partner. These findings underscore the necessity for targeted educational initiatives aimed at enhancing financial capability and promoting financial socializatin.

Keywords: **Subjective financial well-being, Financial Capability, Financial Socialization, Life Partner, Banking sector, Sri Lanka.**

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1. INTRODUCTION

Subjective well-being (SWB) has gained recognition as a significant and insightful measure of social progress, serving as an alternative or complement to traditional economic indicators like gross domestic product (GDP) per capita (Greve, 2010; Stiglitz et al., 2009; Veenhoven, 2008). Research has shown that subjective financial well-being (SFWB) plays a crucial role in shaping overall subjective well-being (SWB), influencing individuals' happiness, life satisfaction, and mental health. Significance of personal subjective financial well-being is not just limited to the individual's overall well-being. Consequently individual' subjective financial well-being has become critical for achieving work productivity (Kim, 2004). Subjective financial well-being (SFWB) is a multidimensional construct that includes feelings of financial security, satisfaction with financial resources, and the perceived ability to meet current and future financial obligations. The study of subjective financial well-being is becoming more and more common in the twenty-first century (Rath & Harter, 2010) and it has drawn interest from a variety of academic fields such as psychology, public health, economics, and medicine (Bowman et al., 2016

As the world navigates a tumultuous and politically unstable post-pandemic landscape (Lim, 2021), there is a growing focus among researchers and practitioners on the potential consequences for financial well-being. This period of uncertainty not only raises questions about economic stability but also highlights the intricate relationship between financial health and broader societal factors. The challenges posed by fluctuating markets, changing employment landscapes, and shifting government policies can significantly impact individuals' perception on their financial wellbeing and overall quality of life. By examining the multifaceted influences on financial health during this critical time, stakeholders can better address the needs of individuals and communities, fostering resilience and promoting sustainable financial practices in an increasingly unpredictable environment. Due to the emerging nature of the concept of subjective financial wellbeing the emphasis of research has been on identifying the elements that contribute to financial well-being (van Praag et al., 2003; Lanz et al., 2017). This includes exploring the psychological, social, and economic influences that shape people's financial experiences and perceptions.

1.1 Research Problem

There are some differences in the meaning, determinants and consequences of subjective financial well-being across countries, ethnicities, cultural contexts, and income groups (Mahdzan et al.,2019; Pew Research Center, 2012). Therefore, the empirical outcomes of developed nations may not be applicable for developing countries. In the literature, there is a wealth of studies focused on consumer financial well-being and there is a notable lack of research conducted on employee subjective financial well-being (Xio, 2016). Also, there is a limited understanding of how life partner financial socialization influences subjective financial well-being. However, if

individuals possess wide range of financial skills, behaviours, and attitudes, it can enhance their subjective financial well-being irrespective of the situation.

Most businesses tend to look out for their staff members' subjective financial well-being (Senanayaka & Weerasinghe, 2021). Financial stress can lead to higher turnover rates, particularly in the banking sector, where competition for talent is fierce. The banking sector is known for its high-pressure work environment, where employees often face significant financial responsibilities and performance expectations. Therefore, understanding subjective financial wellbeing can help identify how financial stress impacts employee performance, job satisfaction, and overall mental health. By examining subjective financial wellbeing, organizations can develop strategies to enhance employee satisfaction and retention, ultimately reducing recruitment and training costs.

Banking sector is a crucial part of service sector in Sri Lankan economy contributing significantly to the country's economic growth nearly with 160,000 employees. But currently, the banking industry has a high rate of employee turnover. Commercial banks have lost a significant sizeable number of employees in 2021 and 2022. It may be a warning sign of an absence of job satisfaction and therefore low subjective financial well-being. Research on consumer socialization indicates that young adults recognize financial socialization with different financial socialization agents that play a significant role in shaping their overall financial well-being (Danes 1994; Gudmunson & Danes 2011; Moschis 1987).

Furthermore, as young adults navigate financial challenges, they often rely on social networks for support, highlighting the interconnectedness of financial awareness and interpersonal relationships in their journey toward adulthood. Married individuals often experience significant impacts on their financial well-being due to the financial socialization they receive from their life partners. Individuals who are having stabilized relationships with their romantic life partner are more likely to have a strong and positive perception on their financial situation (Archuleta et al. 2011). Romantic partners in particular may exert a significant influence because of the formation of a permanent romantic relationship (Eccles et al., 2003). Romantic partners can play a crucial role in influencing individuals, particularly since establishing a lasting romantic relationship and creating an independent household have historically been seen as important milestones in adulthood (Eccles et al., 2003).

Hence, this study aims to investigate the research problem of **" What is the impact of financial socialization agents on subjective financial well-being and in addition, the moderating effect of financial capability on the relationship between financial socialization agents and subjective financial well-being among employees working in the Sri Lankan banking sector?"**

2. LITERATURE REVIEW

2.1 Subjective Financial Well-being

Subjective financial well-being is a multifaceted phenomenon that encompasses

financial behavior, attitudes, and satisfaction (Joo, 2008). Understanding financial well-being, including its definition, measurement, and relationship to other financial concepts such as financial behavior, financial stress, and financial literacy, has been the focus of many scholars (Fan & Henager,2021). subjective financial well-being is gaining prominence in numerous countries, and there are multiple interpretations of its meaning in contemporary discourse (Sabri et al., 2012). According to Bruggen et al. (2017), subjective financial well-being is "the perception of being able to sustain current and anticipated desired living standard and financial freedom" " (p.2). some scholars argue that financial well-being cannot be measured using objective measures because individuals in similar financial situations in terms of wealth, assets, or income may perceive their financial well-being differently depending on various factors. Objective financial well-being is typically determined by external factors, whereas subjective financial well-being is influenced by cognitive and psychological factors (Netemeyer et al., 2018). Individuals in the same financial condition may have a more or less favorable perception of their own financial well-being (Garmen et.al., 2004). The only person who can evaluate their personal financial well-being is the individual themselves (Mahdzan et al., 2019). SFWB (Subjective Financial Well-Being) has generally been viewed as a result influenced by various factors. Key independent variables identified in predicting SFWB include financial literacy or knowledge (Consumer Financial Protection Bureau 2015; McNamara 2007; Sabri & Falahati 2012), income levels

(McNamara 2007), financial behaviors (Sabri et al. 2006; Kim et al., 2003; Hira et al. 1992; Shim et al. 2009), financial stress (Joo & Grable 2004), and various financial attitudes (Joo & Grable 2004).

2.2 Financial Socialization

Financial socialization can be regarded as a subset of broader human socialization. Grusec & Hastings (2015) define financial socialization as "the process by which people are helped to join one or more social groups" (p. xi). This process enhances individuals' comprehension of economic principles and improves their financial decision-making skills (Dew & Xiao, 2011). Financial socialization occurs within a variety of social contexts, including life transitions, economic cycles, and changes in social policy, influenced by social groups such as family, peer networks, workplaces, educational institutions, religious organizations, and racial and ethnic communities (Gudmunson & Danes, 2016). Throughout the lifespan, financial socialization persists and evolves as adult roles and resource levels change (Dew & Xiao, 2011). Financial socialization may occur in both implicit and explicit forms. Gudmunson & Danes (2011) articulate purposive financial socialization as the "intentional efforts family members use to financially socialize each other" (p. 649). They posit that such purposive financial socialization yields positive financial outcomes, particularly when the individual in question maintains high-quality, trustworthy relationships with their social agents. Within parent-child relationship there are many possible ways that unintentional financial socialization can be

occurred. Parents can communicate values, norms, and attitudes about money to children in an implicit manner (Bakir et al.,2006; Gudmunson & Danes, 2011).

2.2.1 Life Partner Financial Socialization

As young adults grow up, they move away from their parents' direct socialization, they practice financial behaviors based on the lessons learned from personal experiences. In addition, by this time, young adults find a romantic life partner to spend their rest of the life, and they incorporate romantic life partner's personal values/experience. Romantic partner often led to conflict with their partners becoming more influential during the early stages of a relationship (Dew & Xiao, 2011). The reason behind these conflicts is financial matters occurring during the initial stages of a relationship (Serido et al. 2015). Ultimate results of these conflicts are unsatisfied marriage life and marital distress which may ultimately lead for divorces. Conversely, those who expressed greater satisfaction with their financial circumstances were more likely to be in stable marriages than those who expressed lower satisfaction (Archuleta et al. 2011). Romantic life partners highly engage in almost all the decisions of their partners, especially regarding their finances. People's perceptions of a romantic partner's financial socialization are associated with their marital status and decision-making, probably because people tend to put off getting married until both partners are financially secure (Furstenberg, 2010). Further, quality of the marriage also influences on the way that financial socialization of romantic life partner is

perceived. According to Ross & Willson (2017), Spouses who showed more hostility and less affection towards their partners were those who expressed greater concern for financial management practices. This in turn affected the standard of marriages between partners.

Curran et al. (2018) reveals that young adults' perceptions of their parents' financial socialization have a less significant impact on various outcomes than their perceptions of their romantic partners' and their own financial behavior. The perceived financial socialization of a romantic partner may gain power as the relationship continues as they share their life together. Hence, romantic couple shares their daily expenses and sometimes they jointly save and invest for their future. Therefore, romantic life partner may have more power to influence their partner's financial knowledge, behaviors, and attitudes. According to the study, young adults' financial and nonfinancial outcomes such as relationship satisfaction and commitment are influenced by the strength of their financial socialization of romantic life partners.

2.3 Financial Capability

Financial capability can be viewed as a broader concept and authors have used several ways to define financial capability (FINRA IEF, 2019). It is believed that financial capability is multifaceted and made up of various domains (FINRA 2009, Kempson et al. 2017). Sometimes it defines as a combination of financial literacy, financial behaviors & financial attitude in several studies. It is occasionally used interchangeably with financial literacy. But

Johnson & Sherraden (2007) differentiate between financial literacy and financial capability, emphasizing that financial capability extends beyond knowledge development to access to financial products and services. Behavioral economics has led to a shift from financial literacy to financial capability, recognizing the importance of various factors in financial decision-making. This holistic view of financial behavior goes beyond knowledge and skills, encompassing a broader understanding of financial capability. Recent studies conducted in USA have shifted their focus from financial literacy to financial capability (Xioa et al., 2014).

2.4 Theoretical Background

2.4.1 Social Cognitive Theory

One of the learning theories of health behavior that is most commonly used is social cognitive theory (SCT) (Baranowski et al., 2002). Social cognitive theory quickly emerged as the theory developed from social learning theory Bandura (1999). Altogether, there are six constructs developed as a part of social cognitive theory; Reciprocal Determinism, Behavioral capability, Observational Learning, Reinforcements, Expectations and Self-efficacy. Reciprocal determinism is the principle of Social Cognitive Theory, focusing on the dynamic interaction between individuals, their environment, and behavior. Behavioral capability refers to an individual's ability to complete tasks using appropriate knowledge and abilities. Observational learning suggests that humans can learn by witnessing others' actions and imitating them, demonstrating successful completion of activities. Reactions to a person's behaviour, whether internal or external, are known as reinforcements and can affect whether the behaviour is sustained. Expectations are the outcomes that an individual believes their actions will bring about, derived from their subjective beliefs and past experiences. Self-efficacy is the conviction that one can successfully complete a task, influenced by one's own abilities, traits, and surroundings.

2.4.2 Capability Approach

A theory called the Capability Approach may be able to shed some light on the moderator role of financial capability between financial socialization and subjective financial well-being. Capability approach was developed by the economist and philosopher Amartya Sen as a human development tool to evaluate people's well-being in terms of their capabilities. He contributed to a paradigm shift by developing capability approach to evaluate people's living standards and well-being. He argued that objective measures such as income, utility and commodities are inadequate measures of quality of life when trying to make comparison between well-being of individuals because commodities are merely means to an end, and since individuals differ due to different influential factors such as physiological, medical, climatic and social factors. Different things will be required for them to achieve the same levels of well-being (Storchi & Johnson, 2016). This argument further support to the fact that the subjective measures are the better indicators than the objective measures of individual's well-being.

3. METHODOLOGY

3.1 Conceptual Framework

There are a number of gaps in the research trying to connect young adults' subjective financial well-being to their financial socialisation. Few studies have examined the relationship between financial socialization with life partner and employees' subjective financial well-being (Pak et.al., 2023). Even though the direct impact of financial capability on the subjective financial well-being is well studied, no studies could be found on the moderating effect of financial capabilities on the relationship between life partner financial socialization and subjective financial well-being in the literature (Ammerman & Stueve, 2019; Cho et al., 2012). Therefore, this study closes this gap by investigating the relationships between various financial socialisation agents and the subjective financial well-being of employees.
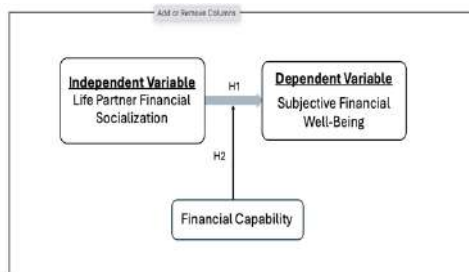
Figure 1 Conceptual Framework

3.2 Operationalization

In Charge Financial Distress/Financial Well-Being (IFDFW) scale (8 items) created by Prawitz et al. (2006) was used to quantify individual's subjective financial well-being. The scale developed by Atkinson et al. (2007) to measuring financial capability was

used to assess individuals' ability to manage their day-to-day finances effectively. Financial socialization measures suggested by Newcomb & Rabow (1999) was used to measure the financial socialization experience with life partners.

3.3 Hypothesis Development

According to Gudmunson & Danes (2011), subjective financial well-being is one of the outcomes of financial socialization. The study found that individuals who received effective financial socialization during childhood and adolescence were more likely to exhibit positive financial behaviors and experience greater subjective financial well-being in adulthood. According to a study by Shim et al. (2009). Baryła-Matejczuk et al., (2020) highlighted the connection between household financial management and the quality of relationships among married or cohabiting partners, suggesting that effective financial communication and shared financial goals enhance both financial well-being and relationship satisfaction. Research indicates that romantic partners play a significant role as socialization agents for young adults following college graduation, exerting a considerable influence on their financial outcomes and overall well-being (Curran et al., 2018). Accordingly, the following hypothese will be tested:

H1: Financial socialization through interactions with life partner is positively associated with SFWB.

Research by Lusardi & Mitchell (2011) highlights that individuals with higher levels of financial capability tend to exhibit better financial management practices and,

consequently, experience enhanced financial well-being. Friedline & West (2016) discovered certain disparities in subjective financial well-being according to whether a person had received formal financial education or was regarded as financially literate. People who come from high-financial literacy societies are typically better able to make wise financial decisions (Alshebami & Aldhyani, 2022). Accordingly, the following hypothese will be tested:

H2: Financial capabilities moderates the relationship between life partner financial socialization and SFWB.

3.4 Research Design

Due to its emphasis on empirical data, objectivity and the establishment of causal relationships, positivist philosophy is the most appropriate for conducting research on determining the moderating role of financial capability between financial socialization with life partner and financial well-being. Study employed deductive approach to systematically test hypotheses derived from existing theories based on empirical evidence gathered from the Sri Lankan banking sector. This study examines relationship between employees' subjective financial well-being, financial capability and life partner's financial socialization, and therefore, primary data was gathered using survey method and a cross-sectional study was conducted using the quantitative approach to analysing the magnitude of the effects of various factors at a single point of view. The target population for this study consists of 52,263 employees working in 24 licensed commercial banks in Sri Lanka.

This study adopted purposive sampling technique to select 5 banks based on the number of employees. Purposive sampling method facilitates the timely and cost-effective collection of a large sample size (Rai & Thapa, 2015). Accordingly, People's Bank (10,000 employees), Bank of Ceylon (8209 employees), Hatton National Bank (5156 employees), Commercial Bank PLC (5121 employees), Sampath Bank (4013 employees) have been selected for the study based the number of employees and number of resignations. Current study purposively selected Western province, since most of the branches of the selected banks are located in the Western province. Also, staff resignation was also higher in western province area which is symptom of poor level of financial wellbeing. Using the selection table developed by Krejcie & Morgan (1970), a sample of 381 employees was selected. A structured and self-administered questionnaire was developed since we need to gather primary data from a wider sample to respond to my research questions. Further, to improve the validity of the questionnaire developed based on the existing literature, a pilot survey was be conducted. The study employed the likert scale for measuring both independent and dependent variables, as well as the moderator variable. Ethical considerations were taken into account, with participants' consent and voluntary participation being required. Data collected through the online survey was handled with confidentiality and anonymity, and approval for data collection was obtained from the researchers' University ethics committee.

Graphical presentations were used to illustrate the distribution of the sample in

terms of bank, age, gender, marital status, and designation. Descriptive statistics were used to characterize the sample data collected without drawing conclusions. After conducting reliability and validity tests it was recognized that the data was generally suitable for hypothesis testing. Bivariate correlation analysis was employed to determine the association between life partner financial socialization and subjective financial well-being. The hierarchical multiple regression method was used to examine the relationship between a dependent variable and independent variables while accounting for the moderating variable. The regression equation was specified as:

FWB = β0 + β1Life Partner + β2Life partner FS.FC +e.

4. RESULTS AND DISCUSSIONS

4.1 Preliminary Analysis

The data analysis revealed 397 responses, with 9 respondents not completing the questionnaire. Due to 3% missing data and sufficient observations, records or fields were list-wise removed. Prior to the hypothesis testing, demographic profile analysis, descriptive analysis, reliability and validity tests, correlation analysis and diagnostic tests were conducted based on sample data.

4.1.1 Demographic Profile

The demographic profile of the sample provides a comprehensive understanding of the participants' backgrounds, which is essential for analyzing the impact of life partner financial socialization on subjective financial wellbeing.

Table 1 Sample Characteristics

Gender	Female	62%
Age	30-39	43%
Marital Status	Married	78%
Education	Bachelors	44%
Designation	Officer	54%
Banks	People's bank	31%

4.1.2 Descriptive Statistics

Mean value for all three variables is around the midpoint of the scale used (3 on a 5-point scale), it suggests a neutral perception. The standard deviation of all the variables falls between is 0.86 and 0.95, showing a moderate level of variability in all three variables. The skewness value for all the variables lies between -0.5 and 0.5 indicating a nearly symmetrical distribution of data. The negative kurtosis values of all the variables which is less than 3 suggest that the distributions are flatter.

Table 2 Descriptive Statistics

	Mean	St. Deviation	Skewness	Kurtosis
SFWB	3.02	.91	.06	-0.77
FC	3.04	.95	.03	-1.03
LFS	2.93	.86	.04	-0.55

4.1.3 Reliability of Data

Higher Cronbach's Alpha value for all variables implies a satisfactory level of internal consistency.

Table 3 Cronbach's Alpha Coefficients

Variable	Number of items	Cronbach Alpha Value
SFWB	7	0.881
FC	12	0.945
LFS	6	0.903

4.1.4 Validity of Data

The high KMO measures for all variables indicate that the observed variables are well-suited for factor analysis, and the total variance explained (TVE) values for each variable exceeded the acceptable level (50%) which demonstrate the extent to which the underlying factors account for the variance in the observed variables.

Table 4 Factor Loading, KMO and Total Variance Explained

Variable	KMO	TVE %
SFWB	0.878	58.877
FC	0.963	62.626
LFS	0.873	65.457

4.1.5 Correlation Analysis

There is a strong positive correlation between subjective financial well-being and financial capability, with a correlation coefficient of 0.777. This suggests that individuals with higher levels of financial capability tend to have higher levels of subjective financial well-being. There is a moderate positive correlation between subjective financial well-being and life partner financial socialization, with a correlation coefficient of 0.571. This suggests that individuals who have received

more financial socialization from their life partners tend to have a positive perception on their own financial well-being.

Table 5 Results of Pearson Correlation Analysis

		SFWB	FC	LFS
SFWB	Pearson Correlation	1	.777	.571
	Sig		.000	.000
FC	Pearson Correlation	.777	1	.576
	Sig	.000		.000
LFS	Pearson Correlation	.571	.576	1
	Sig	.000	.000	

4.1.6 Checking for Assumptions

According to the Normal probability (P-P) plot derived, the residuals fall along a roughly straight line at a 45-degree angle with a minimum deviation, then the residuals are roughly normally distributed. This is further confirmed by the value of skewness and kurtosis of this variable.
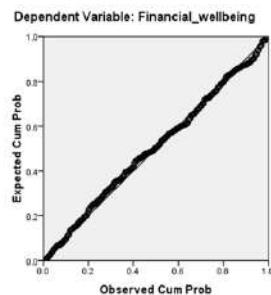
Figure 2 Normal P-P Plot

As per the below scatter plot (Figure 3) residuals are dispersed randomly and lack a

funnel form. It can be concluded that there is no "heteroscedasticity" issue.
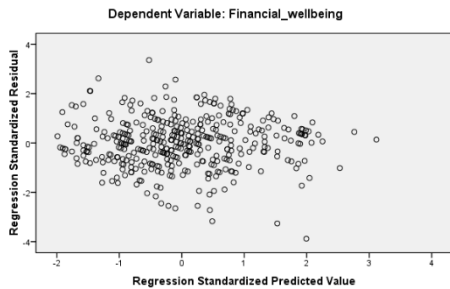
Figure 2 Residual Plot

Based on the result shown by Table 6, Durbin-Watson test of 1.652, which falls between the range of 1.5 and 2.5, it can be concluded that there is no significant autocorrelation problem in the residuals.

Table 6 Test of Autocorrelation

Model	Durbin-Watson
2	1.652

4.2 Hypothesis Testing

The R Square value shows that this model explains approximately 36% of the variance in the dependent variable, which is an improvement over Model 1. The Adjusted R Square of 0.357 also reflects this improvement, suggesting that the moderator variable (Financial Capability) included in Model 2 contribute positively to the model's explanatory power. The change in R Square from Model 1 to Model 2 is 0.012, which indicates a small increase in the explanatory power of the model with the addition the moderator. While this change is statistically significant, it suggests that the moderator has a modest impact on the overall model fit.

Table 7 Model Summary

Model	R	R Square	Adjusted R Square	St. Error of the estimate	R Square Change
1	.590	.349	.347	.748	.349
2	.600	.360	.357	.742	.012

Both models demonstrate a statistically significant ability to explain the variance in the dependent variable, as indicated by their low p-values (0.000) as shown in Table 8.

Table 8 Measures of Model Fit: Anova

Model	Sum of Squares	Mean Square	F	Sig.
1 Regression	117.03	117.0	209.21	.000
Residual	218.72	.559		
Total	335.75			
2 Regression	120.98	60.49	109.84	.000
Residual	214.77	.551		
Total	335.75			

According to the results of the above regression model, it can be realized that all the coefficients are significantly different from zero. There are positive relationships between subjective financial well-being and life partner financial socialization. Mean value of subjective financial well-being is increased by 0.633 when one unit increases in the independent variable; life partner financial socialization holding other factors constant. Model 2 showed that the

moderating impact of financial capability on the relationship between life partner financial socialization and subjective financial well-being was significant.

Table 9 Coefficients

Model	B	Std. Error	Beta	t	Sig.
		Unstandardized	Standardized		
1 (Constant)	1.151	.137		8.428	.000
Life partner FS	.640	.044	.590	14.464	.000
2 (Constant)	1.114	.136		8.180	.000
Life partner FS	.633	.044	.584	14.391	.000
FC x Life partner FS	.122	.045	.109	2.678	.008

H1 hypothesis statement stated there is a positive relationship between life partner financial socialization and subjective financial well-being. The regression coefficient for life partner financial socialization ($\beta = 0.640$, $p < 0.05$) was significant. Therefore, hypothesis 2 was accepted. If the financial capability was added as the moderator between life partner financial socialization and subjective financial well-being, the regression coefficient is ($\beta = 0.122$, $p > 0.05$) and show a statistical significance. As a result, hypothesis 2 was also accepted.

5. CONCLUSION

The goal of this study was to clarify the impact of financial socialization through life partner on the subjective financial well-being of bank employees in Sri Lanka and to examine the role that financial capability plays as a moderator on the relationship between life partner financial socialization and employee's subjective financial well-being.

The acceptance of H1 ($p = 0.000$) highlights the significance of the impact of financial socialization through life partners on employee's subjective financial well-being. Dew & Xiao (2011) found that couples who engage in open discussions about finances tend to have better subjective financial well-being and satisfaction in their relationships. The outcomes of life satisfaction and well-being, as well as relationship commitment and satisfaction, were significantly impacted by the romantic partner's perceived external financial socialization (Curran et al., 2018). Those who expressed greater satisfaction with their financial circumstances were more likely to be in stable marriages than those who expressed lower satisfaction (Archuleta et al. 2011). Acceptance of H2 indicates that financial capability significantly moderate relationship between life partner financial socialization and subjective financial well-being. Lusardi & Mitchell (2014) argues that financial capability is crucial for translating financial knowledge into positive financial behaviors, thereby impacting subjective financial well-being. Xiao et al (2014) examines the moderating role of financial capability in the relationship between financial education and subjective financial well-being.

The significant relationships found in the study reinforce the idea that financial socialization is a multi-faceted process influenced by not only by parents but also life partners under the family influence. The moderation effect of financial capability on the relationship between financial socialization and subjective financial well-being suggests that financial capability is a critical factor in understanding financial outcomes. This indicates that financial education should not only focus on socialization but also on enhancing individuals' financial skills and knowledge.

The findings underscore the importance of ongoing research into the dynamics of financial socialization and subjective financial well-being. The implications of these findings emphasize the need for a comprehensive approach to financial education that involves life partners. Conversations about money management within families can contribute to improved subjective financial well-being. Results of this study implies that the open communication and shared financial goals within relationships contribute to better financial outcomes. Couples who discuss finances and make joint decisions tend to experience improved subjective financial well-being.

This study does not extensively explore the potential for conflict among life partners and how such conflicts may negatively impact subjective financial well-being. Moreover, the study employs a cross-sectional design, capturing data at a single point in time. Financial socialization can occur in different life stages (Gudmunson & Danes, 2011) and however, this study does not focus on how

these dynamics evolve over time and across different life stages.

Future research should examine how other social agents such as peers, media, school influence on individual's subjective financial well-being through financial socialization process with the incorporation of cultural differences as the moderator.

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The Need for Guidance and Counseling Training for Teachers: Insights from Pre-service Teachers in Sri Lanka

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ABSTRACT

In contemporary education, teachers are increasingly expected to undertake diverse responsibilities beyond traditional subject teaching, notably in the realms of guidance and counselling. Globally, there has been a shift from a primarily remedial approach to a more preventive and developmental strategy in providing guidance and counselling services. Given their multifaceted roles, teachers must demonstrate competence in supporting students both academically and personally, inside and outside the classroom. The objectives of the paper were to discuss the critical importance of guidance and counseling training for teachers, and secondly, to explore these training needs through a qualitative analysis of pre-service teacher education students' reflections. The study was conducted with Bachelor of Education in English Language Teaching students at the University of Vocational Technology, Ratmalana, Sri Lanka, who participated in an innovative guidance and counselling component as part of their undergraduate program. Informed consent was obtained from all participants before data collection. The study employed a qualitative research design to explore the Guidance and Counselling training needs of pre-service teachers. Data were collected using a mixed-methods approach, combining questionnaires and semi-structured interviews. The qualitative data from the open-ended questionnaire responses and interview transcripts were analyzed using thematic analysis. Through qualitative analysis of students' reflections, valuable insights were obtained that contribute to the teachers' training needs in guidance and counselling. The findings underscored the necessity of designing teacher education programs that incorporate experiential, reflective, and interactive training approaches, which align with teachers' needs and enhance their motivation and engagement in training. The study highlighted the need for further

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research involving larger samples of teachers from diverse backgrounds to comprehensively assess training needs in guidance and counselling. Future research should investigate these needs concerning teachers' various roles, experiences, and competency levels. Additionally, evaluating the effectiveness of different training programs and their alignment with participants' needs remains a vital area for exploration. The insights gained from this study offer significant implications for developing robust teacher training programs that adequately prepare educators to meet the guidance and counselling needs of their students.

Keywords - Guidance and Counseling, Training Needs, Teacher Education Program, Undergraduates.

1. INTRODUCTION

In contemporary education, the role of teachers has evolved significantly, extending beyond traditional subject teaching to include responsibilities in guidance and counselling. These roles are crucial for supporting students' holistic development, encompassing academic, personal, and social aspects (Sink & MacDonald, 1998; Carey & Dimmitt, 2012). The guidance refers to preventive and developmental work aimed at helping students' whole-person development, while counselling is more remedial and supportive, targeting students with specific problems (Gysbers & Henderson, 1994; Yuen, 2002). Globally, there has been a shift from a remedial approach to a preventive and developmental strategy in providing guidance and counselling services (Schmidt,

2003; Paisley & McMahon, 2001). In Sri Lanka, the evolution of guidance and counselling practices reflects this global trend. Since 1986, Sri Lanka has adopted a preventive approach, promoting a whole-school strategy where all school personnel collaborate to create a supportive environment for students (Sri Lanka Education Department, 2001; Perera & Perera, 2019). Despite these advancements, there remains a significant need for guidance and counselling training for all teachers, as many educators feel unprepared for these roles (Yuen, 2002; Jayasinghe, 2016). The study seeks to investigate the following questions:

1. Do teachers recognize the necessity of receiving training to fulfil their guidance and counselling duties at school?

2. If such a need is recognized, what particular areas of training do they identify as essential?

3. Are there any personal challenges they believe could hinder their effectiveness in guidance and counselling roles?

4. What personal strengths or resources do they believe could enhance their ability to perform guidance and counselling duties effectively?

2. LITERATURE REVIEW

The evolution of guidance and counseling in Sri Lanka can be traced back to the early 20th century, reflecting broader global trends and local educational needs. Initially, the focus was predominantly on vocational guidance, driven by the necessity to align educational outcomes with labour market demands. This early phase was characterized

by a limited scope, primarily addressing the career aspirations of students in secondary schools (Perera, 2014).

Post-independence, the educational landscape in Sri Lanka underwent significant changes, prompting a broader approach to guidance and counselling. The introduction of free education in 1945 marked a pivotal moment, as it expanded educational access and highlighted the need for comprehensive support systems for students (Wijemanne, 2002; Fernando & Peiris, 2012). During the 1960s and 1970s, the focus gradually shifted from merely vocational guidance to encompassing personal and academic counselling, reflecting a growing recognition of the holistic needs of students (De Silva, 2015). The 1980s and 1990s witnessed further institutionalization of guidance and counseling within the Sri Lankan educational system. This period saw the establishment of the National Institute of Education (NIE) in 1986, which played a crucial role in developing training programs and curricula for guidance counsellors (National Institute of Education, 1990). These initiatives were part of broader educational reforms aimed at improving the quality of education and addressing emerging social issues, such as increasing student dropout rates and behavioural problems (Fernando & Peiris, 2012).

In the early 2000s, the Sri Lankan government took decisive steps to integrate guidance and counselling into the national education policy framework. The Ministry of Education's Circular No. 2001/04 formally recognized the role of school counsellors and mandated the provision of

guidance and counselling services in schools (Ministry of Education, 2001). This policy shift underscored the importance of these services in fostering students' personal, social, and academic development. Despite these advancements, challenges remain in effectively implementing guidance and counselling programs across all educational institutions in Sri Lanka. Issues such as insufficient training for counsellors, lack of resources, and cultural stigmas associated with seeking counselling continue to impede the effectiveness of these programs (Jayasinghe, 2016).

Nonetheless, recent initiatives, such as the incorporation of guidance and counselling modules in teacher education programs and increased funding for mental health services in schools, indicate a growing commitment to addressing these challenges (Perera & Perera, 2019; Gysbers & Henderson, 2012). Guidance and counselling in education have historically focused on addressing immediate problems and crises (Gysbers & Henderson, 2012). However, contemporary approaches emphasize preventive and developmental strategies, aiming to equip students with skills to navigate various life challenges (Schmidt, 2014).

Effective teacher training in guidance and counselling is crucial for fostering students' overall well-being and academic success (Corey, 2017). Globally, there has been a marked shift from reactive to proactive approaches in guidance and counselling. This shift is evident in various educational systems worldwide, which now emphasize a preventive model aimed at promoting students' holistic development (Gysbers & Henderson, 2012). This model integrates

guidance and counseling into the daily educational process, ensuring that students receive continuous support. While significant progress has been made, ongoing efforts are needed to overcome existing barriers and fully realize the potential of guidance and counselling services in the Sri Lankan educational system.

Despite the global and local advancements in guidance and counseling, there remains a significant gap in teacher training. Research indicates that many teachers feel ill-prepared to undertake guidance and counseling roles due to insufficient training (Reavley et al., 2014). This gap highlights the urgent need for comprehensive training programs that equip teachers with the necessary skills and knowledge to effectively support their students (Sink & MacDonald, 1998; Carey & Dimmitt, 2012). Training programs should include both theoretical and practical components, allowing teachers to develop a deep understanding of guidance and counseling principles while gaining hands-on experience through supervised practice (Corey, 2017). The incorporation of guidance and counselling modules in teacher education programs is one step towards addressing this gap (Gysbers & Henderson, 2012). However, these modules need to be comprehensive and reflect the diverse challenges that teachers may face in their roles. Additionally, ongoing professional development opportunities should be made available to ensure that teachers can continually update their skills and knowledge in response to evolving educational and societal needs (Schmidt, 2014; Paisley & McMahon, 2001).

3. METHODOLOGY

An innovative guidance and counseling component was incorporated into a compulsory, 4 credited core module for the undergraduates of the Bachelor of Education in English Language Teaching program at the University of Vocational Technology, Ratmalana, Sri Lanka. This module aimed to provide learners with a foundational understanding of theories and issues related to student guidance and counseling, particularly within the Sri Lankan educational context. This component, designed to bridge theoretical knowledge with practical application, was introduced to four cohorts of final-year pre-service student teachers. The inclusion of this component aligns with the study's focus on assessing the perceived training needs, personal challenges, and strengths of these future educators in their guidance and counselling roles. By examining the reflections and experiences of these students, the study aimed to derive insights that could inform the development of more effective and comprehensive teacher training programs in guidance and counselling. The present study employed a qualitative research design, focusing on the reflections of pre-service teachers enrolled in the Bachelor of Education in English Language Teaching program at the University of Vocational Technology, Ratmalana, Sri Lanka. This design was chosen to gain in-depth insights into the participants' experiences and perceptions regarding their training needs in guidance and counseling via interviews and questionnaires. The present study was carried out in its latest presentation with the 2019/20 academic year undergraduates. Fifty students participated in the study. All students were aged 20–30, and 60% of these

students were females attached to the Faculty of Education at the University of Vocational Technology (UoVT). They were asked to indicate their views on three questions which asked about their training needs, impeding issues, and facilitating personal strengths or resources with performing their guidance and counselling role at school.

Boyatzis' (1998) and Graneheim and Lundaman's (2004) procedures were followed in the qualitative analysis of students' responses. The author and a second coder, both familiar with counseling theories and research analysis, independently read through the data thoroughly. Each attempted to derive categories and possible sub-categories for the data, followed by a discussion to decide on the categories and sub-categories and response examples for data analysis. Both observed the mutually agreed principles for coding, ensuring that no student response would be double-coded. The author and the second coder independently categorized students' responses and compared results. Necessary coding adjustments were made until both agreed on the coding of the responses to ensure reliability.

4. RESULTS

The analysis identified 7 categories for challenges that could hinder their guidance and counseling efforts, 10 distinct categories for training needs and 6 categories for personal strengths or resources that could support their work in guidance and counseling.

4.1 Challenges that Could Hinder Guidance and Counselling

The analysis of the impeding issues faced by fifty (50) pre-service teachers revealed various obstacles that hinder their ability to effectively perform their guidance and counseling roles. The responses highlighted a range of personal and institutional challenges. The most frequently cited hindrance was personal qualities, with 20 responses (40% of participants) indicating this as a significant issue. This category encompasses a variety of personal characteristics and traits that can negatively impact a teacher's ability to provide effective guidance and counseling. These might include a lack of confidence, emotional instability, or poor self-management skills. The high response rate suggests that many teachers feel their attributes may impede their effectiveness in these roles. Prejudgment or bias against students was the second most reported hindrance, with 13 responses (26% of participants). This significant figure indicates that many teachers recognize that having preconceived notions or biases about students can severely affect their ability to provide unbiased and supportive counseling. Addressing these biases is crucial for fostering an inclusive and supportive school environment. Lack of experience was identified by 5 participants (10%) as a notable obstacle. This indicates that a portion of pre-service teachers feels unprepared due to insufficient practical experience in dealing with real-life counseling scenarios. The need for more hands-on training and exposure to counselling situations is highlighted by these responses. Workload or time pressures were mentioned by 2 respondents (4%), reflecting the challenge of balancing the demands of teaching with the additional responsibilities

of guidance and counseling. This suggests that time management and the ability to handle multiple responsibilities simultaneously are important skills that need to be developed. Lack of knowledge was also noted by 5 participants (10%), indicating that some teachers feel they do not have enough theoretical or practical knowledge to effectively guide and counsel students. This underscores the importance of comprehensive training programs that equip teachers with the necessary knowledge and skills. School policies were identified as a hindrance by 4 respondents (8%). This indicates that certain institutional policies or bureaucratic constraints can interfere with teachers' ability to perform their guidance and counseling roles effectively. Understanding and potentially revising these policies to support teachers better is crucial. Finally, the 'Others' category, encompassing various additional hindrances, was noted by 1 participant (2%). This category indicates that other diverse obstacles do not fit neatly into the predefined categories but are still relevant to some teachers. In summary, the results highlight that personal qualities and biases are seen as the most significant hindrances to effective guidance and counselling, followed by lack of experience, workload pressures, lack of knowledge, and school policies. These insights can help tailor professional development programs to address these hindrances, ensuring that teachers are better prepared to support their students effectively.

The data obtained from interviews with students revealed various personal and institutional hindrances to their ability to effectively perform guidance and counseling roles. Personal qualities emerged as a significant issue, with one student noting, "My being quiet might lead to weaknesses in self-expression" (Participant 01). This response indicates that introverted or reserved teachers may struggle with effectively communicating and expressing themselves, which is crucial in guidance and counseling contexts. Prejudgment or bias against students was also a notable hindrance, with another student admitting, "Prejudgment or bias of some students – students from wealthy families may be spoiled" (Participant 02). This response highlights the issue of preconceived notions affecting a teacher's ability to provide unbiased and supportive counseling.

Lack of experience was another common obstacle, as one student expressed, "Not experienced in providing guidance and counseling; not sure my suggestions are good for the students" (Participant 03). This response underscores the need for more practical training and exposure to real-life counseling situations to build confidence and competence in future teachers. Workload or time pressures also posed significant challenges, with one student stating, "Time is also a problem for me; too busy, not enough time to use" (Participant 04), and another adding, "Heavy workload means no time to talk to students" (Participant 05). These responses highlight the difficulty of balancing teaching responsibilities with the additional demands of providing guidance and counseling, emphasizing the need for effective time management and institutional support to reduce these pressures. These qualitative insights illustrate the multifaceted challenges that pre-service teachers face and the areas that require targeted intervention to

enhance their effectiveness in guidance and counseling roles.

4.2 Training Needs

The analysis of the training needs of 50 pre-service teachers revealed specific areas where additional development is necessary to fulfil their guidance and counseling roles effectively. The responses highlight the varying levels of importance placed on different skills and knowledge areas among the participants.

The most frequently cited need was for training in communication skills, with 11 responses (22% of participants) highlighting its importance. This underscores the critical role of effective communication in the guidance and counseling process. Teachers need to be adept at both conveying information clearly and listening actively to understand students' issues and concerns. The high response rate indicates a widespread recognition of the foundational role that communication plays in fostering a supportive and trusting environment.

The second most noted area was the need for specific counseling skills, such as questioning techniques, with 7 responses (14% of participants) emphasizing this. This highlights the necessity for teachers to be equipped with practical skills to engage students in meaningful conversations and effectively address their problems. The ability to ask the right questions can help in uncovering underlying issues and facilitating a deeper understanding of students' needs.

Both case studies/skills in handling cases and interpersonal skills received an equal number of responses, with 6 responses each

(12% of participants), reflecting a significant need for practical experience and the ability to build positive relationships. Practical skills in handling real-life cases enable teachers to apply theoretical knowledge in practical settings, preparing them for the diverse situations they will encounter. Interpersonal skills are equally crucial, as they help teachers to establish and maintain positive relationships with students, colleagues, and other stakeholders, which is essential for effective guidance and counseling.

A moderate proportion of the participants (5 responses, 10%) identified a need for theoretical knowledge related to guidance and counseling. This includes familiarity with various therapy theories and frameworks, which provide a solid foundation for effective practice. Understanding these theories can enhance teachers' ability to apply appropriate strategies and interventions in their counseling roles. Less than one-tenth of the respondents (4 responses, 8%) recognized the importance of self-management skills, such as time management and emotional intelligence. This highlights a moderate awareness of the need for teachers to manage their well-being to remain effective in their roles. Developing these skills can help teachers maintain their emotional balance and objectivity, which is crucial for providing effective guidance and support to students.

A small percentage of participants (3 responses, 6%) indicated a need for clarity on the role of a teacher in guidance and counseling. This suggests that while some teachers may require more guidance on

integrating counseling duties with their overall professional responsibilities, it is not seen as a primary concern compared to more interpersonal and practical skills. Similarly, 3 responses (6%) felt that understanding practical issues like school policies was a crucial training need. This indicates that while practical knowledge is important, it is not considered as vital as other skills and knowledge areas.

The least frequently mentioned area was collaboration skills, with only 2 responses (4% of participants) identifying it as a significant need. This suggests that while collaboration is important, it may be perceived as less critical than direct counseling and communication skills. The 'Others' category, encompassing various additional training needs, was noted by 3 responses (6% of participants). This category indicates that other diverse training requirements do not fit neatly into the predefined categories but are still relevant to some teachers.

In summary, the higher figures indicate a strong need for training in communication and counselling skills, practical case handling, and interpersonal skills. The moderate figures suggest a notable but less urgent need for theoretical knowledge and self-management skills. The lower figures highlight that while still important, areas such as understanding the role of the teacher, practical issues, and collaboration skills are seen as less critical by the pre-service teachers. These insights can help tailor training programs to address the most pressing needs of future educators, ensuring they are well-prepared to support their students effectively.

The data from the student interviews shed light on specific areas where pre-service teachers feel they need further training to effectively perform their guidance and counseling roles. Communication skills were highlighted as a crucial area, with one participant noting the need to develop "communication skills with different students (different students with different backgrounds)" (Participant 06). This response underscores the importance of being able to adapt communication styles to suit diverse student backgrounds, which is essential for building rapport and understanding.

Counseling skills were also identified as a significant need, with another participant expressing the desire for "strategies for responding to students so as not to discourage them and stimulate students' emotions" (Participant 07). This highlights the necessity for teachers to be equipped with techniques that foster positive student interactions and emotional engagement, ensuring that their responses are supportive rather than discouraging.

Skills in handling cases were another area of concern. One participant emphasized the need "to learn how to act professionally to deal with students' problems" (Participant 08), while another mentioned the importance of knowing "how to deal with different kinds of problems, e.g., family, personal problems" (Participant 09). These responses indicate that pre-service teachers feel a strong need for practical, case-based training that prepares them to handle a variety of student issues professionally and effectively.

These qualitative insights illustrate the specific skills that pre-service teachers feel

are critical for their development as effective guidance counsellors. Addressing these needs through targeted training programs can significantly enhance their preparedness and confidence in supporting their students.

4.3 Facilitating Personal Strengths or Resources

The interviews with students revealed a variety of personal strengths and resources that pre-service teachers believe could facilitate their guidance and counseling roles. Personal qualities were frequently mentioned, with one participant stating, "I'm patient and I'm a listener. I respect others' privacy" (Participant 10). Another participant added, "I'm myself an optimistic person and I hope I can guide my counselees to think more positively when I talk to them" (Participant 11). These responses suggest that qualities such as patience, respect for privacy, and optimism are viewed as valuable traits that can enhance their effectiveness in counseling.

Social networks were also identified as a facilitating resource. One participant noted, "I have a broad social network, which makes it easier for me to get different resources of information from my friends" (Participant 12). This response highlights the importance of having a wide network of contacts, which can provide diverse information and support, enriching the guidance and counseling process.

Skills or abilities, particularly communication skills, were mentioned as critical enablers. One participant emphasized, "Skills: good communication skills enable me to talk to students easily and make them understand" (Participant 13).

This indicates that strong communication skills are perceived as essential for effectively conveying messages and understanding students' needs.

Working experience was another key resource identified by the participants. One student shared, "I have had a part-time job since I was 17. I've met many different people and have learnt from their stories" (Participant 14). This suggests that previous work experiences, especially those involving interactions with diverse individuals, are seen as beneficial in developing the skills and empathy needed for effective counseling.

These qualitative insights reveal that personal qualities, social networks, communication skills, and previous work experiences are viewed by pre-service teachers as significant strengths that can aid them in their guidance and counseling roles. Addressing these strengths in training programs can help to further develop these areas, ensuring that future teachers are well-prepared to support their students.

The analysis of facilitating personal strengths or resources among the 50 pre-service teachers identified several key areas where participants feel they have inherent or developed capabilities that can support their guidance and counseling roles. The responses were categorized into five main areas.

Personal qualities emerged as the most frequently cited strength, with 15 responses (30% of participants) indicating that attributes such as patience, optimism, and respect for privacy are crucial in their counseling roles. For example, one

participant noted, "I'm patient and I'm a listener. I respect others' privacy" (Participant 10). Another expressed, "I'm myself an optimistic person and I hope I can guide my counselees to think more positively when I talk to them" (Participant 11). These responses suggest that personal traits play a significant role in fostering a supportive and empathetic counseling environment.

Social networks were the second most cited resource, with 10 responses (20% of participants). One participant highlighted, "I have a broad social network, which makes it easier for me to get different resources of information from my friends" (Participant 12). This indicates that having extensive connections can provide valuable support and resources, enhancing the counselor's ability to assist students effectively.

Skills or abilities, particularly communication skills, were mentioned by 9 participants (18% of participants) as critical enablers. For instance, one participant stated, "Skills: good communication skills enable me to talk to students easily and make them understand" (Participant 13). This response underscores the importance of effective communication in understanding and addressing students' needs.

Working experience was identified by 8 participants (16% of participants) as a significant resource. One participant shared, "I have had a part-time job since I was 17. I've met many different people and have learnt from their stories" (Participant 14). This suggests that prior work experience, particularly in roles involving diverse interactions, can provide valuable insights and skills applicable to counseling.

Knowledge was noted by 7 participants (14% of participants) as a facilitating strength. This includes theoretical knowledge and understanding of counseling principles that can be applied in practice. Finally, the 'Others' category, mentioned by 1 participant (2% of participants), indicates that there are additional, less common strengths or resources that some teachers find helpful in their counseling roles.

Overall, the data highlight the importance of personal qualities, social networks, skills, working experience, and knowledge as key resources that pre-service teachers believe will aid them in their guidance and counseling duties. These insights can help inform the development of training programs that further build on these strengths to prepare teachers more effectively for their roles.

5. DISCUSSION

The results of this study provide valuable insights into the training needs, challenges, and personal strengths of pre-service teachers in the context of guidance and counseling. The analysis revealed that effective communication skills, specific counseling techniques, practical case-handling abilities, and interpersonal skills are highly prioritized by pre-service teachers. These areas are crucial for creating a supportive and effective guidance environment.

Effective communication skills are essential for both conveying information clearly and understanding students' needs through active listening. The ability to articulate thoughts and feelings clearly can help teachers build trust and rapport with students, facilitating a

more open and honest dialogue. This is particularly important in the context of guidance and counseling, where students need to feel safe and understood to share their concerns and issues.

Counseling skills, such as questioning techniques, are essential for engaging students in meaningful conversations and addressing their problems effectively. The ability to ask the right questions can help teachers uncover underlying issues and facilitate a deeper understanding of students' needs. This can lead to more effective problem-solving and support for students, helping them to navigate their challenges and achieve their goals.

Practical case-handling skills and interpersonal skills further prepare teachers for real-life scenarios and foster positive relationships with students and stakeholders. These skills enable teachers to apply theoretical knowledge in practical settings, preparing them for the diverse situations they will encounter in their professional roles. Interpersonal skills, such as empathy, patience, and respect, are essential for building positive relationships with students, colleagues, and other stakeholders, which is crucial for effective guidance and counseling.

The challenges identified in the study, particularly personal qualities and biases, underline the need for self-awareness and professional development to address these issues. Many teachers acknowledge that their traits, such as lack of confidence or emotional instability, can hinder their ability to provide effective guidance and counseling. This recognition highlights the importance of self-awareness and personal development in enhancing teachers' effectiveness in their roles.

Prejudgment or bias against students is also a significant barrier, indicating the importance of fostering an inclusive and unbiased school environment. Addressing these biases is crucial for creating a supportive atmosphere where all students feel valued and understood. Biases can lead to unfair treatment and negative outcomes for students, so teachers need to recognize and address their own biases to provide equitable and supportive guidance.

The lack of experience and knowledge among pre-service teachers suggests a need for more hands-on training and comprehensive educational programs. Practical experience is essential for building confidence and competence in future teachers. Exposure to real-life counseling scenarios can help teachers to develop the skills and knowledge they need to support their students effectively.

Workload pressures and institutional policies also pose significant challenges, highlighting the need for better time management and supportive institutional frameworks. Balancing teaching responsibilities with the additional demands of guidance and counseling can be challenging, so schools need to provide adequate time and resources for these activities. Supportive institutional policies can help to reduce workload pressures and create an environment where teachers can effectively balance their dual roles.

The strengths and resources identified by pre-service teachers provide a foundation for developing effective guidance and

counseling practices. Personal qualities such as patience, optimism, and respect for privacy are invaluable in fostering a supportive counseling environment. These qualities help teachers to build trust and rapport with students, creating a safe and supportive space for them to share their concerns.

Social networks and prior working experiences offer additional resources and insights that can enhance counseling practices. Having a broad social network can provide access to diverse information and support, enriching the guidance and counseling process. Prior work experiences, particularly those involving interactions with diverse individuals, can provide valuable insights and skills applicable to counseling.

Strong communication skills and relevant knowledge further equip teachers to support their students effectively. Recognizing and building on these strengths can help tailor professional development programs to meet the specific needs of pre-service teachers. By focusing on and developing these inherent qualities, teachers can create a more positive and effective counseling environment, benefiting both themselves and their students.

6. CONCLUSION

This study underscores the critical importance of addressing the training needs, challenges, and strengths of pre-service teachers in the context of guidance and counseling. Effective communication and counseling skills, practical case-handling abilities, and interpersonal skills are essential for supporting students effectively.

However, personal qualities, biases, lack of experience, workload pressures, and institutional policies pose significant challenges that need to be addressed.

The strengths and resources identified by pre-service teachers, including personal qualities, social networks, communication skills, and prior experiences, provide a valuable foundation for enhancing their guidance and counseling practices. By recognizing and building on these strengths, training programs can be tailored to meet the specific needs of pre-service teachers, ensuring they are well-prepared to support their students effectively.

Based on the findings of this study, several recommendations can be made to improve the training and support for pre-service teachers in guidance and counseling roles in schools.

Developing comprehensive training programs that focus on communication and counseling skills, practical case handling, and interpersonal skills can significantly improve the effectiveness of pre-service teachers. These programs should include hands-on training and exposure to real-life counseling scenarios to build confidence and competence. By providing practical experience, teachers can better apply theoretical knowledge and become more adept at managing diverse situations they may encounter in their professional roles. This approach will help bridge the gap between theory and practice, ensuring that pre-service teachers are well-equipped to handle real-world challenges.

Implementing professional development workshops that focus on self-awareness,

emotional intelligence, and bias reduction can help pre-service teachers recognize and address their challenges and biases. These workshops can foster a deeper understanding of oneself and others, promoting a more inclusive and supportive counseling environment. By developing emotional intelligence and self-awareness, teachers can manage their emotions better and provide unbiased and empathetic support to their students. These qualities are crucial for creating a safe and supportive space for students to share their concerns.

Creating supportive institutional frameworks that reduce workload pressures and provide adequate time for guidance and counseling activities is essential. This can include revising school policies to better support teachers in their dual roles. By reducing administrative burdens and ensuring that teachers have the time and resources needed for counseling, schools can create an environment where teachers can effectively balance their teaching and counseling responsibilities. Institutional support is critical for enabling teachers to perform their roles efficiently and without undue stress. Schools should also consider providing additional resources, such as counseling staff and support services, to assist teachers in their roles.

Recognizing and building on the personal strengths and resources of pre-service teachers, such as patience, optimism, social networks, communication skills, and prior experiences, is crucial. Tailored professional development programs can help enhance these strengths, ensuring that teachers are well-prepared to support their students. By focusing on and developing these inherent qualities, teachers can create a more positive and effective counseling environment. Leveraging these strengths can also help teachers feel more confident and capable in their roles, leading to better outcomes for students.

7. LIMITATIONS

While this study provides valuable insights, it is important to acknowledge its limitations. The sample size of 50 pre-service teachers may not be representative of all pre-service teachers in Sri Lanka, and while this study provides valuable insights, it is important to acknowledge its limitations. The sample size of 50 pre-service teachers might not fully capture the diversity of experiences and perspectives found among all pre-service teachers. Additionally, the study focuses exclusively on Bachelor of Education degree students from a single state university, which may limit the applicability of the findings to other educational settings or degree programs. Future research should consider larger, more diverse samples and incorporate objective measures to validate the findings, ensuring broader applicability and reliability of the results of this type of a study.

Overall, this study highlights the critical areas that need to be addressed to prepare pre-service teachers for effective guidance and counseling roles. By enhancing training programs, addressing personal and institutional challenges, and leveraging personal strengths, pre-service teachers can be better equipped to support their students effectively.

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Challenges in Assessing Learning Outcomes of Undergraduates in Web Development Due to AI-Assisted Solutions

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ABSTRACT

Increasing fascination with artificial intelligence (AI), Large Language Models (LLMs) are a powerful type of Artificial Intelligence (AI) that simulates how humans organize language and are able to interpret, predict, and generate text. Most of the students have been adopted and practicing for taking the quick responses generated by the AI content generators. It has become challenging to determine whether the students have achieved the expected level of learning outcomes and then evaluate the success of education through the evaluation of student's assessments. The study analyzed the knowledge, cognitive abilities, and creative skills of 450 first-year undergraduates in a web development module at private university computing faculty. Students were divided into two categories ass experiment group and control group. A limited time period was given to complete creating a webpage as a in class assessment. The primary languages taught in the module were HTML, CSS, JavaScript, and PHP for web development. The undergraduate's knowledge, cognitive abilities and creative skills were assessed based on the score gained for ten selected attributes code quality and readability, problem solving skills, logical thinking and debugging skills, time management, understanding of programming concepts, complexity management, novel solutions, user friendly interfaces, completeness well designed and functional and use of development tool. Automation testing and manual testing were employed. Code quality and the readability tested by using SonarQube integrated Jenkin. The outcome of the research identified that experiment group, which utilized ChatGPT scores higher compared to control group students. The analysis of the experimental group's scores revealed insights into meeting learning outcomes and student proficiency levels. The study found it challenging to accurately assess full achievement of learning outcomes when assessments include AI-generated content.

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Keywords - **Web Development, AI-based Responses, Undergraduate Education**

1. INTRODUCTION

There has been a growing interest in artificial intelligence (AI) large language models (LLMs) and their practical applications. AI has recently inspired breakthrough advancements in a variety of industries around the world, with LLMs playing a significant role (Li et al., 2023). In education, there is a trend toward implementing the fifth age of the Internet, also known as the Internet of Things (IoT), which has resulted in a growing interest in combining AI- assisted teaching and learning with LLMs (Walczak, Cellary et al., 2023). LLMs are a key development in AI technology, enabling new natural language creation and comprehension capabilities. These models, complex neural networks with billions of parameters, are often trained on massive volumes of text data, often terabytes or larger (Venkatasubramanian, V. and Chakraborty, A., 2024). With the growth of generative AI, academics have started using machine learning, natural language processing (NLP), and LLMs to create conversational AI interfaces, resulting in a new study subject in higher education (Barros, A.., et al., 2023). ChatGPT (Chat Generative Pre-Trained Transformer) is a current phenomenon in the LLMs revolution that has received a lot of interest because of its capacity to do a variety of natural language tasks (Nazir A et al., 2023).

Although many universities in Sri Lanka have incorporated on developing e-learning systems, the success of the system would be depended on the acceptance of the university students. The main focus of this research is to answer the following questions: (1) compare students' cognitive capacities and creative skills to those who access to ChatGPT (2) did not have Checking whether the students has been come up with the expected level of the learning outcomes of the module thought the evaluation of using a assessment. (3) Evaluation criteria improvements.

This section explores the fundamental concepts of web- oriented programming languages. From HTML and CSS to JavaScript, laying a groundwork that encompasses the basics is essential for students to comprehend the intricacies of web development.

This research seeks to assess the cognitive abilities and creative skills of students in a web development module focusing on HTML, CSS, and JavaScript. The assessment was conducted through a practical exercise where students were tasked with creating a webpage within a two-hour timeframe. To evaluate the impact of AI-assisted learning, the participants were divided into two groups: an experimental who were allowed to use ChatGPT and other resources for coding, and a control group, consisting of who relied solely on reference materials and books provided to them.

The objective of this study is to compare students' cognitive capacities and creative skills to those who did not have access to ChatGPT. The project seeks to assess the extent to which AI technologies such as ChatGPT can improve students' learning and performance in coding activities. The student's cognitive abilities were evaluated using a variety of criteria, including code

quality and readability, clarity and simplicity, commenting, consistency, problem-solving skills, algorithm design, logical thinking, debugging skills, understanding of programming concepts, complexity management, and creativity and innovation.

2. LITURETURE REVIEW

A. Importance of Programming Education

Programming education is crucial for contemporary students, as it imparts essential skills such as analytical thinking, problem-solving, logical reasoning, and algorithmic thinking (Agbo et al., 2019; Tikva & Tambouris, 2021). These competencies are indispensable in today's technology-driven and digitalized business landscape (Qian & Lehman, 2017; Topalli & Cagiltay, 2018). Beyond enhancing academic performance and personal development, programming education equips students for future employment opportunities, thus fostering professional success (Agbo et al., 2019; Tikva & Tambouris, 2021). Additionally, acquiring programming skills deepens students' understanding of technology, nurtures creativity, enhances self-expression, and bolsters self-confidence (Noh & Lee, 2020; Romero et al., 2017). This educational process enables students to undertake innovative projects, thereby increasing their technological awareness and preparing them for competitive job markets (Dorotea et al., 2021).

The article "Principles of Teaching Web-Oriented Programming Languages in the Educational Process" by Tukhtaboev Sarvarbek from the Kokand State Pedagogical Institute emphasizes the essential principles for effectively instructing web-oriented programming languages. It highlights the importance of understanding the dynamic educational landscape and the growing significance of web development skills in the job market. The article explores foundational concepts such as HTML, CSS, and JavaScript, and underscores the value of practical applications through coding projects and web development exercises. It advocates for adaptive teaching strategies to keep pace with technological advancements and promotes project-based learning to provide students with real-world experience. By emphasizing the relevance of programming skills to various career opportunities, the article serves as a comprehensive guide for educators on structuring curricula and employing effective teaching strategies (Gospodarka i Innowacje, 2023).

B. Research on the Use of ChatGPT in Coding Education

The usage of ChatGPT in higher education presents issues for assessing student learning outcomes based on constructivist philosophy. The constructivist paradigm emphasizes the significance of actively engaging with the learning content through material manipulation and social interaction (Nikolic, S.,et al 2023). The challenge that has been identified according to (Sambell et al., 2019) was ensuring that the authenticity of students work. Students have been practiced to copy and paste the responses generated by the ChatGPT without using their knowledge. And also lack of referring

the reference materials. This raises concerns about fairness and equity in assessment design, regardless of students' backgrounds, abilities, or access to ChatGPT (Tai et al., 2022). To improve assessment authenticity and rigor when employing ChatGPT, the assessment design should shift toward examining students' learning processes rather than the final outcomes, which are more susceptible to replication by ChatGPT (Abramson, 2023).

C. Evaluate Skill set of Graduates

LLM like ChatGPT are not designed to access or evaluate the skills of the humans.(Huang, et al., 2023). However, the constructivist theory of learning proposes that learners actively create information for themselves through experiences and relationships with others, rather than passively gaining it through external programs such as ChatGPT (Kim, M. and Adlof, L., 2024.) Nonetheless, using ChatGPT and comparable AI models for rapid and superficial learning may have an impact on the development of specific graduate skills, such as critical thinking and problem-solving (Seo et al., 2021). Alternatively, using ChatGPT as a tool of help may aid in the development of some graduate abilities (Dwivedi et al., 2023). Graduate skills, including critical thinking and problem solving, communication, cooperation and teamwork, leadership, flexibility, digital literacy, global and cultural awareness, ethics, and professionalism, are necessary for future career and personal success. This skill development could be scaffolded and gradually developed through strategic curriculum design, as well as included in

evaluations to differentiate distinctively human capacities (Cradle, 2023). As a result, including AI literacy into graduate skills could improve graduates' employability and readiness for the fast-changing work market.

D. Coding quality of the generated content from the ChatGPT

In a recent empirical study, Imai (2022) found that although Copilot generated more code compared to human pair programming, the quality was lower. This study assessed code quality indirectly by measuring the number of lines removed after creation, indicating potential issues with the initial code. The quality of generated code will be evaluated based on guidelines from Robert C. Martin's book, Clean Code. In a 2021 study, Chen et al. (2021) evaluated the functional correctness of code generated by various large language models, including Codex, the model behind GitHub Copilot. They found that Codex successfully solved 28.8% of the problems in their evaluation set. This evaluation will be extended by not only assessing functional correctness but also considering the quality of code generated by both Copilot and ChatGPT. The goal is to provide a comprehensive assessment of the code produced by these tools. A study by Sengamedu and Zhao (2022) proposed a framework for identifying code quality issues using large language models. Their system utilized neural language models to detect problems such as repetitive and unnatural code. However, their focus was not on code generated by these models. The objective here is to evaluate the quality and correctness of code manually generated by ChatGPT and Copilot. This study builds on their insights

by directly examining the quality of code produced by large language models. Significant research activity in this field has been noted, with studies being conducted recently in 2021 and 2022.

3. METHODOLOGY

The purpose of this study is to compare students' cognitive abilities and creative talents when using ChatGPT with when not using ChatGPT in a web development program focused on HTML, CSS, and JavaScript.

A. Participant

The participants of this study include 450 undergraduate students enrolled in a web development module.

The participants are divided into two groups:

• Experimental Group: 215 students using ChatGPT and other resources for coding.

• Control Group: 235 students using reference

materials and books without ChatGPT.

B. Assessment Criteria

Web development for first-year students covers several key areas. In HTML, the focus is on basic tags, tables, forms, and media elements. CSS topics include inline styles, internal styles, and external styles. JavaScript instruction covers basics, if conditions, loops, arrays, functions, validations, and object-oriented programming concepts. This assessment will also encompass all these topics, ensuring comprehensive coverage of the necessary content. Develop a webpage similar to the provided example within a timeframe of 2 hours. Utilize HTML, CSS,

and JavaScript to implement the specified functions. The detailed descriptions of these functions are provided below.

• In the Timetable section, add a click event listener to the "Book Now" button to display a prompt for the number of persons and cost per person, then show the total cost in an alert box.

• In the Service section, add a click event listener to the

"Take Bus Service" button to display a popup with a dropdown menu for service names and prices, along with a field for the number of days.

• Include a "Calculate" button in the popup; when clicked, calculate and display the total price based on the selected service and number of days in an alert box.
• In the Bus Route section, add a click event listener to the

"Bus Route" button to display a popup box with a message.

• In the Contact section, add input fields and a submit

button; when clicked, retrieve and display the entered details in an alert box.

Figure 1 .Student Assessment

A. Evaluation Criteria

The ten attributes specifically assessed for HTML, CSS, and JavaScript projects include as below. In below are the things that considered when testing each parameter. A rubric was taken for evaluating the parameters. The evaluation scale is as follows: Excellent (9-10), Good (7- 8), Fair (5-6), and Poor (1-4).

Table 1. Evaluation Criteria Rubric

No	Parameters	Definition
1	Code Quality and Readability	Simplicity, Clarity and consistency, Commenting, assesses how easy the code is to read and understand, including clarity and consistency, Bugs, Vulnerabilities, Code smells, Coverage, Duplication, Lines of code, Complexity
2	Problem solving skills	Evaluates the student's ability to devise effective solutions and strategies to solve coding problems.
3	Logical Thinking and Debugging Skills	Measures the student's logical reasoning and proficiency in identifying and fixing code errors.
4	Time management	Evaluates how effectively the student manages their time to complete tasks within deadlines.
5	Understanding of Programming Concepts	Assesses the student's grasp of fundamental programming concepts and their correct application.
6	Complexity management	Measures the student's ability to manage and reduce code complexity, ensuring efficient performance.
7	Novel Solution	Evaluates the creativity and innovation shown by the student in developing unique solutions to problems.
8	User Friendly Interfaces	Assesses how intuitive and user-friendly the interfaces created by the student are.
9	Completeness Well Designed and Functional	Well-Designed and Functional. Evaluates the overall robustness, design, and functionality of the completed project.
10	Use of Development Tools	Use of Development Tools Measures the student's proficiency in utilizing various development tools and technologies effectively.

A. Data Analysis

Once the student's assessment is completed all the projects were completed manual testing and automated testing were taken for the testing purpose. This analysis was used to compare the cognitive abilities and the creative skills of the students.

B. Data Collection and Normalization:

For each parameter (e.g., Clarity, Simplicity, Commenting), collect the scores for all students.

Normalize these scores using the formula:

$$N_{uy} = \frac{S_u - \min(P)}{\max(P) - \min(P)}$$

where:

- N_{uy} is the normalized score for student u on parameter y.
- S_u is the raw score of student u on parameter y.
- min(P) is the minimum score across all students for parameter y.
- max(P) is the maximum score across all students

for parameter y.

Assign equal weights to each parameter. Calculate the weighted score for each parameter using:

$$W_u = w_i \times N_{uy}$$

Were,

• Wu is the weighted score for student u on parameter y

• wi is the weight assigned to parameter y.

Final Score for Each Student:
Sum the weighted scores to get the final score for each student:

$$\text{Final Score} = \sum W_u$$

F. Analysis of Parameters
Parameter 01 – Code Quality and Readability
The process of checking the code quality involves running automated scans for all 450 student projects using an integrated SonarQube and Jenkins setup. Upon each code commit, Jenkins triggers a pipeline that automatically pulls the latest code, runs the build process, and executes the SonarQube scanner. This scanner inspects the codebase for various quality metrics such as code smells, bugs, vulnerabilities, technical debt, and code duplication. The collected data is

then visualized on the SonarQube dashboard, providing a detailed overview of the code quality and highlighting trends over time. This automated and continuous integration process ensures a thorough and consistent evaluation of all projects, enabling an in-depth analysis of the
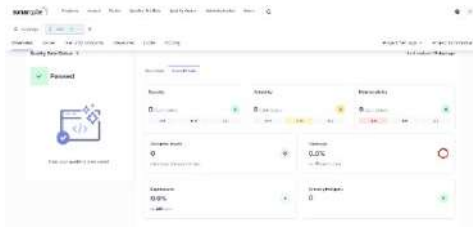
cognitive abilities and creative skills of the students in both the experimental and control group.

Figure 2. Sonarqube Testing Results Dashboard for one project

From Parameter 02 to 10, A manual code review process can be implemented to evaluate the attributes that SonarQube does not cover. This involves a panel of experts or instructors who assess the code against a rubric.

4. RESULTS AND DISCUSSION

Here are the results analysis of each student assessment score.

Parameter 01 - Code Quality and Readability
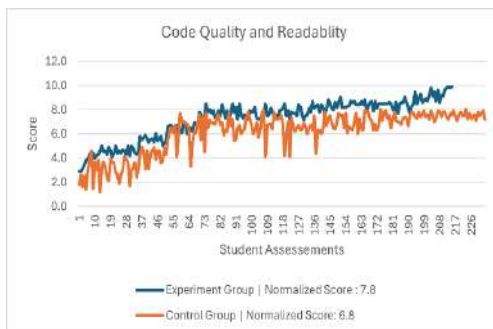
Figure 3. Data Analysis of Parameter 01

When considering the testing outcomes of SonarQube for code quality and readability, several factors are evaluated: simplicity, clarity, consistency, commenting, and overall ease of understanding. SonarQube assesses aspects such as bugs, vulnerabilities, code smells, coverage, duplications, lines of code, and complexity. The normalized score for the experiment group was 7.8, while the control group scored 6.8. These scores highlight the differences in code quality and readability between the AI-assisted code and the code written independently.

Parameter 02 – Problem Solving Skills

Students' problem-solving skills were evaluated, revealing that those who used ChatGPT were able to solve problems more easily compared to those who tackled them independently. The answers provided by students who utilized ChatGPT showed noticeable differences in quality and accuracy, with the experiment group achieving a normalized score of 6.8 and the control group achieving a normalized score of 5.9. This discrepancy highlights a gap in assessment, indicating that students' evaluation on problem-solving skills cannot be accurately assessed due to the use of ChatGPT for assistance.
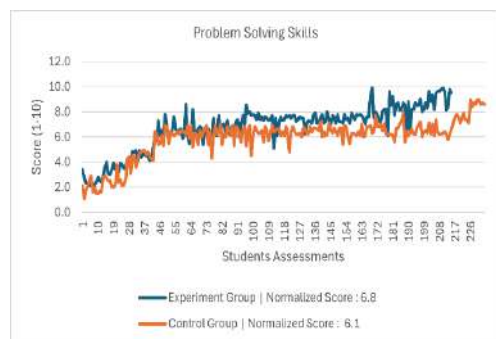
Figure 4. Data Analysis of Parameter 02

Parameter 03 – Logical Thinking and Debugging Skills
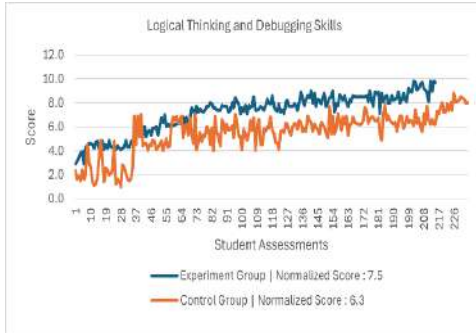
Figure 5. Data Analysis of Parameter 03

The assessment also aimed to evaluate students' logical thinking and debugging skills. Lecturers designed this assessment to improve these skills and to better prepare students for industrial work. However, achieving this target presents issues when students use ChatGPT to solve problems easily. The reliance on AI tools like ChatGPT hinders the accurate measurement of students' true capabilities in logical thinking and debugging, potentially compromising their readiness for real-world industrial challenges.

Parameter 04 – Time Management
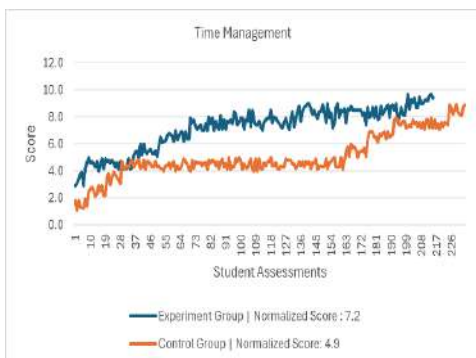
Figure 6. Data Analysis of Parameter 04

When considering time management, a considerable gap in the normalized scores can be seen between the two groups. Students who used ChatGPT were able to complete tasks in a shorter time period compared to those who did them independently. This efficiency is attributed to the use of ChatGPT, leading to an issue in accurately identifying students' true time management skills.

Parameter 05 - Understanding of Programming Concepts
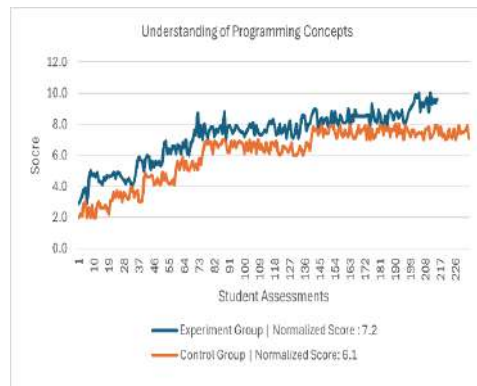
Figure 7. Data Analysis of Parameter 05

Web development for first-year students aims to build interest in application development by starting with webpage creation using simple programming concepts. However, achieving this goal presents challenges when students rely on AI assistance to generate code, as it can hinder their understanding and learning of fundamental programming concepts.

Parameter 06 - Complexity Management

When considering complexity management, there is no significant difference between using ChatGPT and coding independently. ChatGPT sometimes provides unnecessary code segments, and students coding by

themselves also tend to use redundant or overly complex code, as there are simpler ways to achieve the same results.
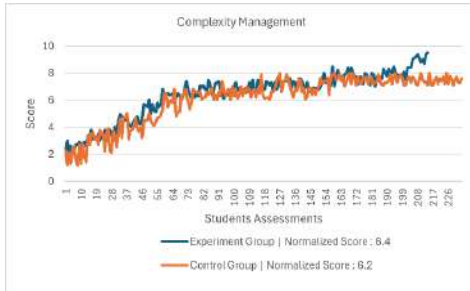
Figure 8. Data Analysis of Parameter 06

Parameter 07 – Novel Solutions
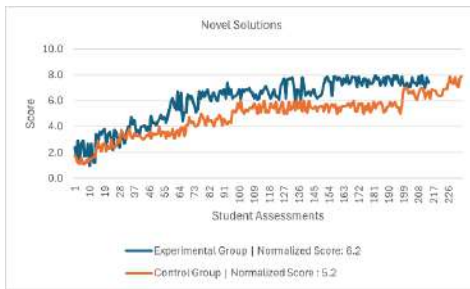
Figure 9. Data Analysis of Parameter 07

When considering novel solutions, ChatGPT generates content based on the provided prompts, often producing multiple design options. In contrast, independent work requires creative thinking and the development of original approaches to problem-solving, which fosters innovation. Therefore, reliance on ChatGPT can create issues in nurturing creativity, as it may limit opportunities to explore and generate unique solutions.

Parameter 08 – User Friendly Interfaces
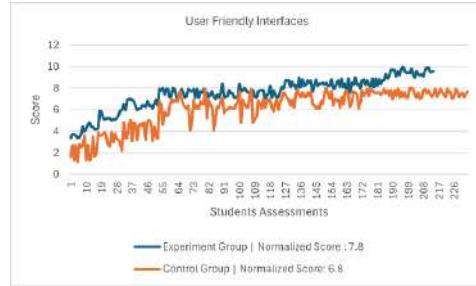
Figure 10. Data Analysis of Parameter 08

The idea of generating user-friendly interfaces focuses on creating designs that are intuitive and easy to navigate for users. In an evaluation of this approach, the experiment group achieved a score of 7.8, while the control group scored 6.8. This indicates that the experiment group, which likely used more effective methods or tools, produced interfaces that were more user-friendly compared to those created by the
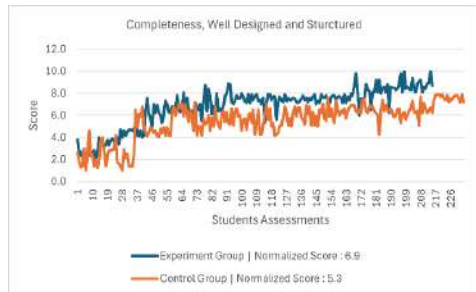
control group.

Parameter 09 – Completeness, Well Designed and Structured

Figure 11. Data Analysis of Parameter 09

Students utilizing ChatGPT demonstrated well-structured coding practices, including the use of external or internal CSS styles and separate scripting sections. This group completed approximately 70% of the task within the allotted time. In contrast, the control group displayed less organized code structures and less effective implementation of internal and external CSS and JavaScript scripting, leading to incomplete task

completion compared to the experimental group.

Parameter 10 – Use of Development tool
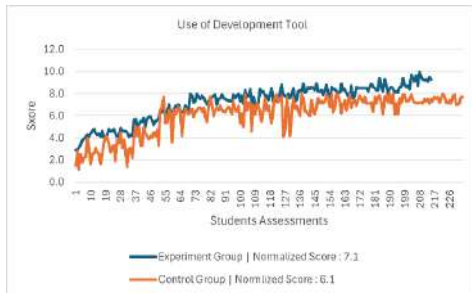
Figure 12. Data Analysis of Parameter 10

When considering the use of development tools, most students utilized VS Code and Sublime Text for coding. There was no significant difference between the control group and the experiment group in terms of tool usage.

5. CONCLUSION

The significant t-value indicates that the difference in average scores between the experimental group (70.8) and the control group (59.3) is statistically significant. This suggests that the use of ChatGPT and other resources positively impacts students' performance in the web development module. Students in the experimental group achieved scores within the A- to A range, while those in the control group scored between B and B+. This result underscores that AI assistants may not effectively capture students' fulfillment of learning outcomes, posing challenges in accurately assessing student performance. Additionally, it complicates efforts to enhance students' cognitive skills and creative abilities in web-based development modules.

Table 2. Summary of Normalized Score of Experiment Group

Parameters checked	Normalized score	Median score	Standard Deviation	Min Score	Max Score	Score Range	Weight
Code Quality and Readability	7.8	6	1.666	3	9	1-10	1
Problem solving skills	6.8	6	2.02	1	8	1-10	1
Logical Thinking and Debugging Skills	7.5	6	2.03	1	8	1-10	1
Time management	7.2	6	1.15	3	7	1-10	1
Understanding of Programming Concepts	7.1	5	2.02	2	9	1-10	1
Complexity management	6.4	7	1.443	3	8	1-10	1
Novel Solutions	6.2	7	1.73	2	8	1-10	1
User Friendly Interfaces	7.8	6	1.66	3	9	1-10	1
Completeness Well Designed and Functional	6.9	5	1.732	2	8	1-10	1
Use of Development Tools	7.1	7	1.734	3	9	1-10	1

Table 3. Summary of Normalized Score of Control Group

Parameters checked	Normalized score	Median score	Standard Deviation	Min Score	Max Score	Score Range	Weight
Code Quality and Readability	6.8	6	1.666	3	9	1-10	1
Problem solving skills	6.1	6	2.02	1	8	1-10	1
Logical Thinking and Debugging Skills	6.3	6	2.03	1	8	1-10	1
Time management	4.9	6	1.15	3	7	1-10	1
Understanding of Programming Concepts	6.1	5	2.02	2	9	1-10	1
Complexity management	6.2	7	1.443	3	8	1-10	1
Novel Solutions	5.2	7	1.73	2	8	1-10	1
User Friendly Interfaces	6.8	6	1.66	3	9	1-10	1
Completeness Well Designed and Functional	5.3	5	1.732	2	8	1-10	1
Use of Development Tools	6.8	7	1.734	3	9	1-10	1

6. FUTURE RECOMMENDATIONS

It is concluded that assessing students based solely on their code is insufficient for determining final marks. Consequently, an oral examination was conducted to evaluate students' understanding of the code they

created. This approach involved conducting viva voce or oral exams to assess comprehension, adopting a holistic assessment strategy, and using rubric-based scoring. Additionally, peer reviews and self-assessments were incorporated, alongside regular feedback, to provide a more comprehensive evaluation of students' abilities.

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Exploring the Impact of Chatbot Integration on Emotional Labour and Job Satisfaction Among University Academics

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ABSTRACT

This study explores the integration of chatbots in educational environments and its implications for emotional labour and job satisfaction among university academics. By combining the Technology Acceptance Model (TAM), Technology Pedagogy and Content Knowledge (TPACK) framework, and the Job Demands-Resources (JD-R) model, the research examines how chatbots can serve as a technological resource to alleviate the emotional demands placed on educators. The study delves into the complex relationships between emotional labour, technology acceptance, and job satisfaction, offering a comprehensive framework for understanding the potential of chatbots to enhance teaching practices while supporting educators' well-being. This research aims to address existing theoretical and empirical gaps, providing insights into the effective integration of chatbots to foster more sustainable and fulfilling academic careers..

***Keywords* - Chatbots, Emotional Labour, Higher Education, Job Satisfaction.**

1. INTRODUCTION

Emotional labour refers to the effort invested by individuals, particularly in educational settings, to manage and display emotions as part of their professional duties. For university academics, managing emotions is crucial for fostering supportive learning environments, handling student behaviour, and enhancing academic success (Smith & Jones, 2021).

Chatbots has increasingly been integrated into educational environments, offering various tools such as virtual assistants, AI-driven administrative support, and intelligent tutoring systems. These AI

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E-mail address: Please add the e-mail of the corresponding author here.

applications may influence emotional labour by automating routine tasks, providing immediate assistance, and potentially reducing the emotional burden on academics. However, the impact of AI on emotional labour and its subsequent effects on workplace well-being and institutional effectiveness are not well-documented.

This research aims to examine how AI affects emotional labour among university academics. It will explore the role of workplace well-being as a mediating factor and analyse the effects on institutional effectiveness. By investigating these relationships, the study seeks to provide insights into how AI can improve academic work environments and institutional outcomes.

1.2 Statement of the Problem

Emotional labour, defined as the effort individuals invest in managing their emotions to meet the emotional demands of their work, has been extensively studied across various industries, such as healthcare, customer service, and hospitality. However, despite its relevance, there is a significant gap in the literature concerning emotional labour dynamics within the field of education, particularly among university academics. These professionals are required to navigate a complex array of emotions daily, whether dealing with difficult students, managing the pressures of academic workloads, or maintaining professionalism in challenging situations.

Current research has predominantly focused on emotional labour in non-academic settings, leaving a gap in understanding how these emotional demands specifically affect university academics. This is particularly critical because emotional labour in education can significantly impact job satisfaction, well-being, and the effectiveness of teaching. Furthermore, while emotional intelligence—the ability to recognize, understand, and manage one's own and others' emotions—has been studied in various fields, its role in the educational sector, especially in relation to emotional labour, remains largely unexplored. This gap presents an opportunity to investigate the interplay between emotional labour, emotional intelligence, and job satisfaction among university academics.

Moreover, the integration of Chatbots into educational environments is rapidly changing the emotional landscape of academic work. AI tools, such as virtual assistants and automated administrative systems, are increasingly used to support academics in their day-to-day tasks. However, the impact of these technological advancements on the emotional labour of academics is not yet understood. It is crucial to examine whether AI alleviates or exacerbates the emotional burdens associated with academic work, and how this, in turn, affects the emotional climate within university environments.

This research seeks to systematically address these gaps by exploring the relationships between emotional labour, emotional intelligence, and job satisfaction among university academics. Additionally, it will examine the influence of AI on these dynamics. Specifically, the research aims to answer the following questions:

- What is the relationship between emotional labour and job

satisfaction among university academics?

- How does emotional intelligence mediate the effects of emotional labour on job satisfaction?
- In what ways does AI influence the emotional labour of university academics, and how does this impact their overall well-being and institutional effectiveness?

By investigating these questions, this study will contribute to a deeper understanding of the emotional challenges faced by university academics. The findings will have practical implications for developing strategies to support academics in managing their emotions more effectively, thereby enhancing job satisfaction and institutional effectiveness. Additionally, the study will provide valuable insights into the role of AI in shaping the emotional landscape of academic work, offering guidance for integrating AI in ways that benefit both educators and students.

Despite substantial research on emotional labor in sectors like healthcare and customer service, there is a marked gap in understanding its dynamics in higher education, especially among university academics. These educators encounter unique emotional demands that differ from those in primary and secondary education contexts. For instance, university academics must balance teaching and research responsibilities, navigating complex emotional interactions with adult learners who often face academic and personal challenges, as highlighted in studies by Smith & Jones (2021). In contrast, primary and secondary educators are generally focused on nurturing younger students and providing emotional support, as seen in Apsara & Arachchige's (2016) research. This contrast underscores the importance of studying emotional labor specifically within higher education, where these demands can lead to emotional exhaustion if not properly managed. Additionally, the integration of chatbot technology offers a novel context to explore how these AI tools might alleviate or alter these emotional burdens for university educators..

1.3 Research Objectives

- To explore how the use of chatbots influences emotional labour and overall well-being among university academics.
- To determine the relationship between emotional labour and job satisfaction in the context of university academics.
- To analyse the role of emotional intelligence as a mediator between emotional labour and job satisfaction.
- To evaluate the impact of AI tools on the emotional labour experienced by university academics.
- To assess how changes in emotional labour due to AI influence institutional effectiveness..

2. LITERATURE REVIEW

2.1 Conceptualization of Emotional Labour in Educational Environments

Emotional labour refers to the time and effort spent on self-regulation to align one's emotions with workplace expectations (Lee & Madera, 2019). In the educational sector, which is a subset of the service industry, emotional labour is especially prevalent.

Academics in higher education are often required to engage in emotional labour due to the multifaceted nature of their roles, which extend beyond teaching to include research, managing difficult students, fulfilling leadership roles within institutions, and adhering to stringent professional requirements (Taxer & Frenzel, 2015; Lyndon et al., 2021).

Despite emotional labour being a characteristic feature of educational work, its manifestation is influenced by individual teaching styles and the long-term, intensive daily interactions typical in teaching roles (Morris & Feldman, 1996). The importance of emotional labour in education has grown significantly, particularly in response to technological advancements and the global pandemic (Hargreaves, 2000). Educators often find themselves performing emotional labour by managing their emotions in ways that may not be genuine, such as feigning enthusiasm or suppressing frustration, to maintain a professional demeanour (Taxer & Frenzel, 2015). This emotional regulation is essential to effective teaching, yet it is also a source of stress and emotional exhaustion (Mahoney et al., 2011).

The Conservation of Resources (COR) theory (Hobfoll, 1989) was applied in this study to explain how emotional labour contributes to emotional exhaustion. This theory posits that individuals strive to acquire, maintain, and protect resources, and when these resources are threatened or lost, stress and burnout can occur.

2.2 Emotional Labour Among University Academics: The Sri Lankan Context

In the context of Sri Lanka, several studies have explored aspects of emotional labour among educators. Research on job satisfaction among senior teachers at international schools (Apsara & Arachchige, 2016) and national schools (Arachchige, 2014) has highlighted the emotional demands placed on educators. Specifically, in university settings, Thisera and Bandara (2017) examined the emotional exhaustion resulting from emotional labour.

While there has been some research on emotional labour in Sri Lankan educational contexts, particularly within primary and secondary education, there is a noticeable gap in the literature regarding the impact of emotional labour on university academics. The existing studies have not extensively reviewed or revised this subject area, indicating a need for further exploration.

2.3 Job Satisfaction in Academic Settings and Its Relationship with Emotional Labour

Job satisfaction in academic settings is a crucial factor influenced by various elements, including emotional labour. Locke's Range-of-Affect Theory (1976) suggests that job satisfaction is influenced by the perceived discrepancy between what an employee values and what they actually experience in their job. In educational contexts, teachers' job satisfaction is shaped by the alignment between their expectations and the realities of teaching (Ho & Au, 2006). Recent studies have examined how emotional labour affects job satisfaction among academic staff. Brown and Taylor

(2020) found that the emotional demands placed on educators can significantly influence their job satisfaction. Patel and Brown (2022) further explored the role of work-life balance in shaping job satisfaction, particularly considering gender expectations. The literature indicates that emotional labour, when not managed effectively, can lead to decreased job satisfaction, particularly when educators are unable to balance their emotional and professional demands.

2.4 The Role of Emotional Intelligence in Managing Emotional Labour Among Academics

Emotional intelligence (EI) is defined as the ability to perceive, use, understand, and manage emotions effectively (Mayer & Salovey, 1997). In educational settings, higher emotional intelligence has been associated with lower levels of burnout and higher levels of personal accomplishment (Platsidou, 2010). The relationship between emotional intelligence and emotional labour, however, is less explored. Some studies have suggested that emotional intelligence can mitigate the negative effects of emotional labour. For instance, Austin, Dore, and O'Donovan (2008) found that higher emotional intelligence negatively predicted the use of surface acting strategies among college students. Similarly, Karim and Weisz (2011) reported that emotional intelligence influences teachers' use of deep acting but not surface acting. While the evidence is still emerging, the potential for emotional intelligence to influence how academics engage in emotional labour is an important area for further research.

2.5 Emotional Labor and Its Impact on Student Engagement

While much of the research on emotional labour has focused on its impact on teacher well-being, there is also evidence to suggest that it affects student outcomes. Teachers who engage in emotional labour, particularly deep acting, tend to foster higher levels of student engagement (Grandey & Sayre, 2019). However, this comes at a cost to teacher well-being, as surface acting, where emotions are faked, can lead to emotional exhaustion and decreased cognitive performance (Goldberg & Grandey, 2007; Wang et al., 2019). The relationship between teachers' emotional labour and student engagement is complex. Positive emotions, even when not entirely genuine, can enhance student engagement through emotional contagion (Frenzel et al., 2018). Yet, the long-term effects on teacher well-being may compromise teaching effectiveness, suggesting a need for balanced emotional labour strategies in educational settings.

2.6 Integration of Chatbots in Educational Settings: Implications for Emotional Labour

The integration of AI-driven chatbots in educational environments has introduced new dynamics into the teaching process. Chatbots serve dual roles: enhancing student communication skills and providing automated support to educators (Dsouza et al., 2019). These tools can reduce the emotional labour required by educators by automating routine tasks and providing consistent support (Ondas et al., 2019). However, the ethical implications of chatbot use in education must be considered.

Concerns about the potential for misuse and the blurring of lines between human and AI interactions have been raised (Murtarelli et al., 2021). Despite these concerns, chatbots offer significant benefits, including personalized learning environments and continuous feedback for students (Chocarro, Cortiñas & Marcos-Matás, 2023). The use of chatbots could potentially alleviate some of the emotional labour experienced by educators by taking over tasks that require constant emotional engagement.

2.7 Chatbots

Chatbots, as defined by Adamopoulou and Moussiades (2020), are computer programs specifically developed to emulate dialogue with human users, primarily via the internet. These programs leverage technologies such as Natural Language Processing (NLP) and sentiment analysis to engage in text or oral communication with humans or other chatbots (Khanna et al., 2015). The terms digital assistants, intelligent bots, interactive agents, artificial conversation entities, and chatbots are often used interchangeably to describe these AI-driven tools.

While the basic function of a chatbot is to facilitate dialogue, their ability to replicate human-like interaction is an ongoing challenge. One critical distinction between human and chatbot interactions is the perception of empathy. Although chatbots have shown significant advancements in comprehending and responding to emotions, their capacity for genuine conversational comprehension remains limited. This is a significant issue when chatbots are used in roles requiring emotional labour, such as customer service or educational support,

where understanding and empathizing with users is crucial.

Luo et al. (2019) conducted a study that highlights the potential of chatbots to surpass human performance in specific tasks. For instance, chatbots can be four times more productive than inexperienced sales personnel and can perform as proficiently as specialized consumer purchasing staff. However, while these findings demonstrate the efficiency of chatbots, they also raise questions about the quality of interaction and the emotional connection between the chatbot and the user. The study suggests that chatbots can handle routine tasks effectively, but it does not address their impact on emotional labour, particularly in education, where the quality of interaction is paramount.

Adamopoulou and Moussiades (2020) provide a comprehensive categorization of chatbots based on their knowledge domain and functionality:

- Generic Chatbots: These chatbots can respond to user inquiries across various fields of knowledge. An example is Chorus, a prototypical chatbot that operates without domain-specific constraints.

- Cross or Open-Domain Chatbots: Examples include Guardian, CRQA, and AskWiz, which can operate across multiple domains, offering broader but less specialized interaction.

- Domain-Specific Chatbots: These chatbots, such as InstuctableCrowd, Legion: Mobile, or SnapTravel, are designed to handle inquiries related to specific areas of knowledge, providing

more detailed and accurate responses within their domains.

- Interpersonal Chatbots: These chatbots perform specific services, such as making reservations or searching FAQs, without focusing on a companion-like interaction.

- Intrapersonal Chatbots: These chatbots are more intimate and are designed to reside within the user's digital environment, often linked to platforms like Slack or WhatsApp. They possess a deep understanding of the user's preferences and needs, enabling more personalized interactions.

- Inter-agent Chatbots: These chatbots facilitate communication among other chatbots. For example, Alexa and Cortana can be connected to establish intercommunication, enhancing their utility through collaborative interaction.

2.8 Integrating Chatbots into Educational Practices

2.8.1 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), developed by Davis (1989), is a well-established framework used to understand the factors influencing individuals' acceptance and use of technology. Rooted in the Theory of Reasoned Action (TRA) by Fishbein and Ajzen (1975), TAM posits that two primary factors—perceived usefulness (PU) and perceived ease of use (PEOU)—determine an individual's intention to use a particular technology. These factors, in turn, influence the actual adoption and utilization of the technology.

In the context of education, TAM can be applied to explore how educators perceive and integrate chatbots into their teaching practices. The model suggests that educators are more likely to adopt chatbots if they perceive them as useful in enhancing their teaching effectiveness and if they find the technology easy to use. Additionally, the perception of usefulness is influenced by the ease of use, meaning that the more user-friendly the chatbot technology, the more likely it is to be perceived as beneficial.

Venkatesh and Davis (2000) expanded the original TAM by introducing external factors, such as subjective norms, job relevance, and output quality, which further influence PU and PEOU. This expansion allows for a more comprehensive understanding of how various factors—such as institutional support, training, and peer influence—affect educators' acceptance of chatbots.

However, while TAM provides a valuable framework for examining technology acceptance, it has limitations in addressing the emotional aspects of technology adoption, particularly in the context of emotional labour in education. The model focuses primarily on cognitive and rational determinants of technology use, potentially overlooking the emotional and psychological factors that may influence educators' willingness to adopt chatbots.

2.8.2 Technology Pedagogy and Content Knowledge (TPACK)

The integration of technology into education necessitates that educators possess not only subject-matter expertise and pedagogical skills but also a thorough understanding of

how to effectively use technology in their teaching. The Technology Pedagogy and Content Knowledge (TPACK) framework, proposed by Mishra and Koehler (2006), addresses this need by emphasizing the intersection of content knowledge (CK), pedagogy knowledge (PK), and technology knowledge (TK).

TPACK extends Shulman's (1986) concept of Pedagogical Content Knowledge (PCK) by incorporating technological knowledge as a critical component. This framework recognizes that effective teaching in the 21st century requires educators to understand not only the subject matter and how to teach it but also how to leverage technology to enhance learning outcomes.

In the context of chatbot integration, TPACK provides a valuable lens through which to examine how educators can effectively incorporate chatbots into their pedagogical practices. Educators must develop a nuanced understanding of how chatbots can support specific teaching strategies and content areas. For example, a chatbot might be used to facilitate personalized learning experiences or to provide real-time feedback to students.

However, the successful integration of chatbots into teaching practices also depends on educators' willingness and ability to adapt to new technologies—a process that is influenced by their TPACK. The challenge lies in ensuring that educators have the necessary support and training to develop their TPACK, enabling them to integrate chatbots in ways that are pedagogically sound and contextually appropriate.

2.8.3 Job Demands-Resources (JD-R) Model

The Job Demands-Resources (JD-R) model, as described by Brough et al. (2013), offers a framework for understanding how job demands and resources impact employee well-being, job satisfaction, and overall performance. The model posits that job demands—such as emotional labour—can lead to strain and burnout, while job resources—such as support, autonomy, and technology—can enhance engagement and job satisfaction.

In the context of education, emotional labour is a significant job demand, as educators are often required to manage and regulate their emotions while interacting with students. The integration of chatbots into educational settings can be viewed as a potential job resource that might alleviate some of the emotional demands placed on educators. For instance, chatbots could handle routine administrative tasks, provide support for student inquiries, or assist with grading, allowing educators to focus more on the emotional and pedagogical aspects of teaching.

The JD-R model also highlights the dual pathways of strain and motivation, suggesting that the presence of sufficient resources (such as effective chatbot technology) can mitigate the negative effects of high job demands. However, the model also raises questions about the extent to which chatbots can truly alleviate emotional labour, particularly in roles where human interaction is central to the job.

The integration of these theoretical frameworks—TAM, TPACK, and the JD-R

model—provides a comprehensive lens through which to examine the role of chatbots in education. Hochschild's theory of emotional labour provides the foundation for understanding the emotional demands placed on educators. TAM offers insights into the factors influencing educators' acceptance and use of chatbots, while TPACK emphasizes the importance of integrating technology into pedagogical practices. The JD-R model, in turn, provides a framework for analysing the potential impact of chatbots on job satisfaction and overall well-being.

By combining these frameworks, this research aims to explore the complex relationships between emotional labour, technology acceptance, and job satisfaction in educational settings. Specifically, the study seeks to understand how chatbots can be integrated into educators' workflows in ways that support their emotional labour, enhance their job satisfaction, and ultimately contribute to more effective teaching and learning outcomes.

This integrated approach not only addresses the theoretical and empirical gaps in the existing literature but also provides a practical framework for examining the impact of chatbot-mediated emotional labour on educators. Through this research, we aim to contribute to a deeper understanding of how emerging technologies can be harnessed to support educators in their professional roles, ultimately leading to more sustainable and fulfilling careers in education.

3. METHODOLOGY

3.1 Research Design and Approach

This study adopts a mixed-methods research design to explore the relationships between chatbot usage, emotional labour, and job satisfaction among university academics in Sri Lanka. This approach is justified by the need to capture both the quantitative aspects of these relationships and the qualitative nuances of educators' experiences with chatbots in their work environment.

The mixed-methods approach combines a quantitative survey and qualitative interviews and focus group discussions. The quantitative component aims to test specific hypotheses related to the Technology Acceptance Model (TAM) and Job Demands-Resources (JD-R) Model, while the qualitative component seeks to gain deeper insights into the emotional labour associated with chatbot usage in educational settings.

Quantitative data will be analysed using the Statistical Package for the Social Sciences (SPSS). Techniques such as correlation analysis and multiple regression analysis will be employed to evaluate the hypotheses. The analysis will focus on identifying relationships between emotional labour, job satisfaction, and chatbot acceptance.

Qualitative data will be analysed thematically, allowing the researcher to identify key themes and patterns in the participants' experiences. This analysis will complement the quantitative findings, providing a richer understanding of the research problem.

The mixed-methods approach is selected to capture the complexity of emotional labour and chatbot acceptance among academics.

While quantitative methods will provide measurable data on the relationships between variables, qualitative methods will offer insights into the contextual and experiential aspects of the phenomena. This combination of methods will enhance the validity and reliability of the research findings.

3.2 Sample Selection

The population for this study includes academics from both state and non-state universities in Sri Lanka. The sample will be selected to ensure fair representation of academics across different universities, ensuring diversity in gender, academic disciplines, and university type (state and non-state).

To ensure a representative sample, the total academic population will be stratified by university performance, and a simple random sampling method will be applied within these strata. This approach aims to capture a broad spectrum of academic experiences and perspectives.

3.3 Systematic Literature Review (SLR)

The study will incorporate a systematic literature review (SLR) to provide a comprehensive understanding of the existing research on emotional labour, chatbot technology, and their impact on the education sector. The SLR will identify gaps in the literature and inform the conceptual framework of the study.

4. CONCLUSION

Understanding the relationship between chatbots and emotional labour among educators is pivotal for enhancing the overall well-being and effectiveness of the education system. This research aims to offer novel insights into how chatbots can influence emotional labour and job satisfaction, potentially transforming how educators interact with technology in their professional roles. By highlighting both the benefits and challenges associated with chatbot implementation, this study will guide policymakers and educational institutions in making informed decisions about integrating these technologies. Furthermore, this research will contribute original knowledge to the intersection of technology and emotional labour, providing a deeper understanding of its implications for educators and students in the digital era. The findings will pave the way for more effective strategies to manage emotional labour, ultimately fostering a more supportive and productive educational environment.

The findings from this study underscore the potential of chatbots to reduce the emotional demands on university academics by automating routine tasks, allowing them to concentrate more on teaching and personal interactions. The research highlights that emotional intelligence plays a key role in mediating the effects of emotional labor on job satisfaction, suggesting that training in emotional intelligence could benefit educators in managing their professional roles. By bridging the gap in emotional labor literature for higher education, this study provides a framework for understanding how chatbot technology can support academic well-being. These insights offer valuable contributions to educational practices, informing institutions about the benefits of thoughtful AI integration to

enhance both job satisfaction and institutional effectiveness.

5. RECOMMENDATIONS FOR EFFECTIVE CHATBOT INTEGRATION

To support university academics' emotional labor through chatbot technology, institutions should consider the following recommendations:

Educators should receive tailored training on integrating chatbot technology into their daily tasks. This training should extend beyond technical usage to include strategies for blending AI support with pedagogical practices, ensuring chatbots act as helpful aids rather than additional burdens. Training can be grounded in frameworks such as the Job Demands-Resources (JD-R) model (Brough et al., 2013), which emphasizes providing job resources like technology to counterbalance emotional demands and reduce burnout.

Institutions are encouraged to conduct pilot programs to evaluate the effectiveness of chatbots in specific academic settings. This approach aligns with recommendations by Chocarro, Cortiñas, and Marcos-Matás (2023) on assessing user acceptance in technology deployments. Gathering feedback from educators and students during these trials will help refine chatbot functions to better suit the emotional and academic needs unique to university contexts.

Implementing continuous assessments to measure chatbot impacts on emotional labor and job satisfaction ensures that technology remains a support rather than a stressor. Surveys and focus groups, as recommended by Hagenauer and Volet (2014) in educational technology studies, can provide essential feedback and facilitate ongoing improvements in chatbot implementation.

Institutions should carefully manage the extent to which chatbots replace human interaction, especially given the importance of personal engagement in educational settings (Hargreaves, 2000). Policies should support a balanced approach where chatbots supplement rather than replace human interactions, preserving essential emotional connections between educators and students, which are critical for effective teaching and learning.

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Exploring Adoption Intentions in the Integration of Artificial Intelligence in Fintech: Multiple Case Study from Sri Lanka

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ABSTRACT

AI has significantly revolutionized the financial industry through the integration of digital technology (AI) in Fintech. Despite its increasing importance, many complexities, limitations etc. inhibit the adoption of AI. This study aims to identify the adoption (acceptance & rejection) intentions and perceptions of AI in Fintech through a qualitative approach to understand the complex behaviour of humans apart from the generalized observations through the lens of behavioural theories and to understand the contextual reasons of the differing adoption rates in varied economies..

***Keywords* - Artificial Intelligence; Adoption Intentions; Sri Lanka.**

1. INTRODUCTION

1.1 Background of study

Over the recent past years, Digital transformation has been the whirlwind creating enormous changes in varied domains. Of which, financial technologies profoundly known as Fintech is the most driving and salient force behind such astounding changes in the financial and especially the banking domain (Dewasiri et al., 2023). Fintech is the game changer that alters the way financial services are provided enabling increased convenience, low cost, increased transparency etc. (Rasiwala & Kohli, 2021). Fintech is no longer limited to the once so-called modern digital technologies, such as e-banking, smart apps etc. but rather go beyond to develop and introduce varied new age innovative technology instruments to meet the ever-changing financial needs and demands with the rising and transforming trend of Artificial Intelligence (AI) (Belanche et al., 2019). This trend has been revolutionizing every industry at large irrespective of the

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sector, from manufacturing to service or to any other kind (Belanche et al., 2019) and banking is no exclusion. The impact of AI proliferating and contributing to economic growth is said to be $15 trillion by the year 2030 and it has the power of revamping the processes of businesses, employee engagement, provision of customer services etc. (Nazir et al., 2023). The impact is so gigantic that it is also predicted that nearly 47% of the jobs and tasks will be taken over by AI by 2033 and around 60% of jobs will be impacted by the adoption of AI (Lv et al., 2022). Hence, AI poses clear pathways and opportunities to transform in the field of finance to provide increased value to the stakeholders and delving and possessing understanding in this arena is crucial in this techno-oriented era (Chi & Hoang Vu, 2022).

1.2 Research Problem

Increasingly many economies have been adopting AI in Fintech applications. The Bank of America in United States, the Bank of Tokyo in Japan etc. have already integrated AI in their Fintech applications (Belanche et al., 2019). Despite the wave of Artificial Intelligence and the substantial benefits one could ostensibly reap from its adoption, there have been many criticisms due to the ethical challenges (Lehner et al., 2022), perceived risk (Lee & Chen, 2022; Song et al., 20c22), trust issues (Lee & Chen, 2022), complexity, perceived cost (Lee & Chen, 2022), awareness or knowledge (Rong Rong Lin et al., 2023), perceived communication quality (Song et al., 2022), service failures etc. (Lv et al., 2022) with regard to AI. Many factors have been significantly playing a role in consumer

acceptance, user's adoption and continuance usage of AI and determines the future for AI integrated Fintech (Lee et al., 2021; Lv et al., 2022). Hence, the adoption and use of algorithmic support (AI) in financial services is constantly subject to debate and criticisms and has gained the increased attention of researchers, particularly because of the criticisms, challenges, and inequities that artificial intelligence applications have brought about (Nzobonimpa, 2023). Findings from the previous studies too have reinforced the equivocal results; hence, there are ongoing calls for further development of knowledge in this field of research (Tandon et al., 2020; Ryan & Casidy, 2018; Kushwah et al., 2019) highlighting confusion. In addition, many of the current studies have examined consumer decision making through lens of behavioural theories. However, limitations of these theories are their potential to predict only generalized consumer behaviors (Hagger et al., 2002; Gilal et al., 2019). Also, existing studies have primarily been conducted using quantitative methods, which may not completely explain the complex nature of adoption and resistance behaviors (Rasheed et al., 2023). There has also been criticisms on the existing literature for ignoring the factors contributing to consumer resistance to innovations (Garcia et al., 2007; Antioco and Kleijnen, 2010) leading to the necessity of identifying the behaviours and perceptions of adoption intentions. Moreover, context specific reasons too have been identified in influencing user's decision (Rasheed et al., 2023), however, there exists lack of research in the AI domain at large especially in developing economies which necessarily inhibits in identifying the

contextual reasons for such economies (Chi & Hoang Vu, 2022). Hence, identifying the influence of context specific reasons in different contexts too is too important. Moreover, the user's adoption of AI has been so slow, despite its growing importance especially in the context of developing economies raising concerns with regards to the adoption of AI from the customer's perspective (Chi & Hoang Vu, 2022; Belanche et al., 2019). Even though there is a growing scientific literature and evidence on AI (Chi & Hoang Vu, 2022; Rasheed et al., 2023) the extant literature lacks empirical investigations that explore adoption intentions and its effects regarding AI in Fintech (Alimadadi et al., 2020). Hence, this study attempts to fill the gap in the literature to identify adoption intentions and the potential impacts of artificial intelligence in financial services delivery in the context of Sri Lanka.

1.3 Research Questions

1. What are the underlying intentions (factors) and perceptions that influence the adoption (acceptance or rejection) of AI in Fintech?

2. How do these underlying intentions (factors) and perceptions shape and influence the adoption of AI in Fintech?

1.4 Research Objectives

1. To identify the underlying intentions (factors) and perceptions that influence the adoption (acceptance or rejection) of AI in Fintech.

2. To examine how the underlying intentions (factors) and perceptions

shape and influence the adoption of AI within the Fintech industry.

1.5 Significance of the Study

Artificial Intelligence has been significantly transforming the entire finance industry through the integration of AI in Fintech. Amidst the rising trend for AI there has been both an optimistic and pessimistic impressions of the adoption in Fintech. Given the lack of literature work explaining AI adoption, the research contributes to the literature and fulfills the knowledge gap and attempts to clear the confusion through its findings of AI (Chi & Hoang Vu, 2022) by examining the underlying intentions (factors) and how those factors shape and influence the adoption of AI in Fintech. Moreover, it is evident that there has been a lack of empirical evidence, especially supporting different contextual specifications. Hence, by conducting the study, the empirical findings fulfill the gap by contributing to the literature of AI (Belanche et al., 2019; Chi & Hoang Vu, 2022).

In terms of practical significance, in order to adapt and sustain the transformation of the finance industry, firms should seek to better understand customers' needs and demands so as to succeed in the introduction of AI adoption. Also, understanding and discussing consumers' perceptions about AI is necessary in order to guide successful infusion of AI-driven innovations, which will benefit both companies and the general public. That is, after attracting early adopters, in order to achieve greater effectiveness and value companies have been aiming to introduce the service to a greater public that may be initially hesitant

about the worth of such an innovation (Ryu, 2018). Thus, organizations need some guidance on how to successfully implement AI in Fintech in order to help retain existing, and attract potential, customers. However, despite the opportunities derived from the launching of FinTech AI applications, research on perceptions and factors influencing user's adoption of AI is very limited. Hence, this study would help to extend these services to a greater number of customers and provide practical implications to service firms to innovate their businesses and improve their long-term relationships with customers (Belanche et al., 2019). Moreover, while AI provides various disruptive opportunities in the FinTech space in terms of data collection, analysis, safeguarding and streamlining processes, it also poses a sea of threats to incumbent banks. This study provides vital insights for the policymakers of the banking industry to address the challenges of adopting AI in banking. It also provides important predictors of the bank customers' intention to adopt AI in banking services. Policymakers can devise their strategies to enhance AI adoption considering the facts (Rahman et al., 2021).

2. LITERATURE REVIEW

2.1 Artificial intelligence

Artificial intelligence is the capability of machines to mimic human intelligence in order to perform regular tasks such as problem-solving, planning, and learning (Nazir et al., 2023). IN other words, AI is human intelligence displayed and portrayed by machines (Huang & Rust, 2018). IN comparison to other technologies, AI, as a revolutionary and transformative technology

innovation, which is capable of making decisions and take independent actions, also facilitates in provide better connection and interaction with customers, and is developed and based on technologies, such as cognitive computing and machine learning (Lv et al., 2022). Chi and Hoang Vu (2022), identify AI as a combination of mathematical algorithms and systems that can perform tasks which were only performed by humans earlier. AI at large is capable to act, react, interact and cooperate like humans. AI has been developed from the narrow concept of intelligence, which addresses task performance, to super AI, which is expected to combine social skills and more complex creation. The difference between automated IT systems and AI is that AI can learn and recommend solutions to humans independently.

2.2 Financial Technologies (FinTech)

Financial technology (FinTech) is regarded as a critical determinant of strategic planning in the banking industry. (Rahman et al., 2021). FinTech was defined by Bettinger (1972) as cited by Knewtson and Rosenbaum (2020) as, an acronym which stands for financial technology, that combines bank expertise with modern management science techniques and the computer. However, after a few decades, the widespread adoption of the personal computer and the existence of the Internet and mobile connectivity, and the introduction and integration of new innovations and technologies the scope of FinTech has broadened. According to Knewtson and Rosenbaum (2020), in the current modern techno based world, FinTech is defined as technology used to provide

financial markets a financial product or financial service, characterized by sophisticated technology relative to existing technology in that market.

2.3 Factors and perceptions that influence the adoption intentions (acceptance or rejection) of AI in Fintech

According to the literature, with the aid of existing models and theories many diverse factors and perceptions have been identified that influence the user's adoption of AI in Fintech. According to Lee and Chen (2022), two AI feature constructs as stimuli are considered to be affecting the perceived use of customers, namely, perceived intelligence and anthropomorphism which in turn affect the task-technology fit (TTF), perceived cost, perceived risk and trust (organism). IN the study of Song et al. (2022), communication quality and privacy risks were identified to be significant factors impacting user's adoption. While some studies have noted that performance expectancy (PE) and facilitating conditions (FC) are crucial (Rong Rong Lin et al., 2023). In a qualitative study conducted by (Rasheed et al., 2023) values, motives, customer values and global motives, and most importantly context-specific factors affect the user's adoption. While some studies, have identified differently that empathic response provided by AI in financial services unlike the humans have a positive effect on the users (Lv et al., 2022). According to some studies, the inherent characteristics of individuals such as personal traits (specifically personal innovativeness and technology anxiety) and ex-post instrumentality perceptions (specifically price value, hedonic

motivation, compatibility and perceived security) influence largely in making the adoption and continuance decisions (Lee et al., 2021). According to the findings of Rahman et al. (2021), the quantitative results indicated that attitude towards AI, perceived usefulness, perceived risk, perceived trust, and subjective norms significantly influence intention to adopt AI in banking services while perceived ease of use and awareness do not (Rahman et al., 2021). Moreover, performance expectancy, openness, social influence, hedonic motivations and generativity have a positive impact on entrepreneur's acceptance intention of AI (Kelly et al., 2022). Additionally, affordance has no direct relationship with AI acceptance intention, but it affects AI acceptance intention through attitude (Kelly et al., 2022). Inconvenience has a significant negative relationship with the intention to accept AI, while uncertainty was found to be positively affecting the AI acceptance intention. Effort expectancy did not confirm any significant relationship (Kelly et al., 2022).

2.4 Advantages and disadvantages of using AI in Fintech for users

The use of AI to Fintech allows businesses to improve the client experience by coming up with novel, long-term, and strategic solutions. Additionally, AI enables businesses to make difficult, crucial decisions in an unexpectedly competitive and dynamic business climate that facilitates effective outputs for customers. AI in Web 2.0 marketing applications (Fintech) enables an interactive environment for organizations to quickly answer client expectations and build a sizable base of loyal customers

(Nazir et al., 2023). For managing various marketing initiatives, maximizing user engagement on social media, providing a personalized online customer experience, and increasing the rate of purchasing recommended goods and services, businesses use AI technologies (such as chatbots, customer feature recognition, and content recommendation systems). These technologies have drastically shaped consumer buying behavior by offering customers valuable knowledge of products and services. These technologies allow companies to keep the experience of their products and services at the top of consumers' minds (Nazir et al., 2023).

On the other hand, customers attribute the following as disadvantages or rather would be identified as the reasons for being skeptical to use the technology of using AI: perceived risk (Lee & Chen, 2022; Song et al., 2022), trust issues (Lee & Chen, 2022), complexity, perceive cost (Lee & Chen, 2022), lack of awareness or knowledge and increased complexity in usage (Rong Rong Lin et al., 2023), perceived communication quality is not effective and does not provide proper appropriate responses (Song et al., 2022), service failures etc. (Lv et al., 2022) with regard to AI.

3. RESEARCH METHODOLOGY & THEORETICAL LENSES

3.1 THEORETICAL LENSES

3.1.1 Unified Theory of Acceptance and Use of Technology (UTAUT)

Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, 2003 as cited by Sharma & Mishra, 2014) is constructed on four key constructs namely "performance expectancy, effort expectancy, social influence and facilitating conditions (Sharma & Mishra, 2014). Performance expectancy Performance expectancy is defined as the degree to which an individual believes that using the system will help him or her to attain gains in job performance (Sharma & Mishra, 2014). Effort expectancy is defined as the degree of ease associated with the use of the system. Social influence is defined as the degree to which an individual perceives that important others believe he or she should use the new system (Sharma & Mishra, 2014). Facilitating conditions are defined as the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system. According to this theory all four above constructs positively influence the adoption of any technology. Accordingly, the above constructs too could possibly have an impact on the AI adoption in Fintech (Sharma & Mishra, 2014).

3.1.2 Technology-Organization-Environment (TOE) framework

The Technology-Organization-Environment (TOE) framework (Tornatzky & Fleisher, 1990) will be adopted to investigate the factors influencing technology adoption in the Fintech sector in Sri Lanka. This framework outlines three key factors that impact technology adoption: technological context, organizational context, and environmental context.

The technological context examines aspects derived from Rogers' (2003) technology adoption model, focusing on the perceived

advantages and disadvantages of the technology. The organizational context encompasses characteristics of the organization, such as size, resource availability, readiness for change, and support from top management. Lastly, the environmental context includes external regulatory influences, competitive pressures, and other market dynamics (Alshamaila et al., 2013; Gangwar et al., 2015; Low et al., 2011; Oliveira et al., 2012).

While there are numerous models and frameworks for understanding technology adoption, the TOE framework & UTAUT model provides a comprehensive typology that effectively categorizes the diverse factors affecting adoption decisions within organizations.

3.2 Research Methodology

Research methodology refers to how the study will answer the research questions and how the methodology will be implemented. Research methodology in other words is the philosophy or general principles which guide and justify the research (Dissanayake, 2023).

3.2.1 Philosophical assumptions

The rationale for selecting the methods is described as research philosophical assumptions (Crotty, 1998). Ontological and epistemological assumptions are basic for every paradigm (Scotland, 2012). Ontology is referred to study of being. Ontological assumptions are concerned with what is reality. Researchers need to take a position on their perception of how things work. ON the other hand, epistemology, aims to understand the feelings and attitudes – as social phenomena which have no external reality (Saunders et al., 2009). Epistemological assumptions are established upon the understanding of the nature of knowledge; they connect to human knowledge and are gained through the empathic understanding of the participant's subjective lived realities, and understandings. Inherently, different paradigms contain different ontological and epistemological views; therefore, they have different assumptions of reality and knowledge that underpin their specific approach to research (Scotland, 2012).

3.2.2 Research Philosophy/ Paradigms

Positivism, realism, interpretivism, objectivism, subjectivism and pragmatism are different philosophies adopted in the research process (Dissanayake, 2023; Saunders et al., 2009). Positivism paradigm which relies on objectivism Epistemology is a methodological philosophy in quantitative research where we will use natural science methods to discover social science studies (Crotty, 1998). Interpretivist paradigm is conceived as a relativistic ontology with a subjectivist epistemology and aligned with postmodern thinking (Levers, 2013). The model of interpretivist is more relevant to this research because it deals with the perceptions of people and concern with qualitative approaches (Saunders et al., 2009). The advantage is that interpretive researchers, with their diversified views on phenomena, can not only describe objects, human or events, but also understand them deeply in the social context (Saunders et al., 2009). Furthermore, researchers can conduct these types of research in a natural environment using key methodologies such as grounded theory, ethnography, case study

or life history to gain insight from the insider (Tuli, 2010). Interpretive approaches offer knowledge and understanding of behaviour, describe behaviour from the viewpoint of the individual, and do not overpower the participants.

3.2.3 Research Approach

The two major research approaches are Deductive and Inductive approaches, where the former uses the literature to help you to identify theories and ideas that you will test using data, in such instances, an available theoretical or conceptual framework is tested using the data. On the other hand, for the latter, data is explored to develop theories or to deduce findings and conclusions, from them subsequently it will be related to the literature. This study adopts an inductive approach since it does not attempt to test an existing theoretical framework but rather through the data attempts to obtain conclusions (Saunders et al., 2009).

3.2.4 Research Methodology

Research methodologies are two types according to Denzin and Lincoln (1994) that are qualitative and quantitative. The quantitative method analyses the relationship between variables, numerical and uses statistical models. The qualitative method enables descriptive, non-numerical, uses reasoning and words; it aims at gaining meaning, feeling, perceptions and defining the situation (Saunders et al., 2009). This study has employed qualitative methodology due to its inherent characteristics that is more appropriate for the study. This methodology is also useful in exploring the meaning that people give to their

experiences as statistical generalizations will not be appropriate to inculcate individual experiences and different perceptions (Denzin and Lincoln, 1994).

3.2.5 Research context

The study will be conducted in the Sri Lankan context, being a developing economy, it enables to understand the context specific reasons of AI adoption and the influence of it on the user (Chi & Hoang Vu, 2022). Moreover, Sri Lanka's financial system is in the early stages of AI adoption in Fintech hence, the context will be suitable to identify the perception and factors influencing adoption rather than continuance usage unlike in developed economies where AI has been established. Moreover, it is apparent that the user's adoption of AI in Fintech is relatively slow, even though initial steps have been taken, beyond that we do not see an increasing trend. Hence, in a context like Sri Lanka where financial system plays a crucial role and especially, the banking industry which acts as the backbone of the economy, would be an appropriate context for the study.

3.2.6 Selection of Participants

Only a few licensed commercial banks currently use AI in their financial technologies, namely, Sampath Bank, NDB Bank, and DFCC Bank. Users of such banks will be selected through purposive sampling techniques to identify the appropriate respondents for the current study.

3.2.7 Data collection

The required data will be collected through primary sources for the study. Initially after the selection of the appropriate participants

for the study, the interviews for the study will be conducted during the period from August to October 2023 and is expected to span around thirty minutes to fifty minutes each from the interviewees. The data gathered provided valuable insights to understand the perceptions and factors influencing the adoption of AI technologies in Fintech and the advantages and disadvantages of using AI in Fintech. The composition of the interviewees or the sample size will be determined based on the data saturation, in other words until the additional data collected provides few, if any, new insights (Saunders et al., 2009). Interviews will be conducted in English or in the customer's mother tongue which will be eventually translated, tape-recorded and notes will be taken during the time of interviews.

3.2.8 Data collection techniques

Interviews - Interview is defined as "purposeful discussion between two or more people" (Kahn & Cannell, 1957). Interviews offer a means to collect valid and reliable data that is relevant to the research question and objectives. In this study, primary data collection will involve face to face semi structured interviews with the participants in total. The participants will be diverse in terms of educational backgrounds, income levels, race, religion, gender, occupations etc. to accommodate differences and to obtain diverse opinions. Accordingly, interviews will be conducted for a time period range of thirty minutes to fifty minutes. Appointments to conduct interviews were made in advance and the confidentiality of the participants and even the information provided by interviewees

will be ensured before commencing the interview.

Observations - Observation is also critical in a qualitative study and it is usually complemented with interviews. For this study observations will also be undertaken during the interview to identify the respondents' behaviors, attitudes etc. and will be used as inputs for the research.

3.2.9 Data analysis

Qualitative data is often subjective, complex, and consists of in-depth information normally presented in the form of words. Analyzing qualitative data encompasses reading many transcripts looking for similarities or differences, and subsequently finding themes and developing categories. Accordingly, thematic framework was used to analyze the data obtained from interviews and documents. Thematic analysis is a valid approach to research in analyzing people's views, opinions, knowledge, experiences, or values from a set of qualitative data such as interview transcripts, social media profiles, or survey responses (King, 2004). Thematic analysis provides a greater level of flexibility in interpreting the data and allows approaching large data sets more easily by sorting them into broad themes. However, it also involves the risk of missing nuances in the data obtained. Thematic analysis is often quite subjective and varies with researcher's judgment; hence careful and close attention will be paid towards the data collected to pick up the real findings of the study. Upon the completion of the interviews, the recordings will be transcribed. Later the transcripts will be analyzed in detail and be

highlighted for the major themes to be used for the study.

3.2.10 Ethical considerations and trustworthiness of the data

Maintenance of ethicality was given a higher preference during this research. The subjects' anonymity is ensured at all stages of the research, and the interviewees were justified with the reasons for the data collection and on how the collected data will be used. Moreover, to ensure trustworthiness of the data the Tracey's Big Tent Criteria will be followed (Tracy, 2010).

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A study on analyzing knowledge sharing within an organization: Testing an alternative theoretical model of employee attitude towards knowledge sharing

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ABSTRACT

This research aim to examine the factors affceting to employee attitude towards knowledge sharing in a Multination Company in Sri Lanka. Social Exchange Theory and Social Capital Theory has been used to examine various determinants of employee attitude towards sharing knowledge within an organization. Survey result from 61 employees in Sri Lanka has suggested that the employee trust plays an important role in semployee attitude towards sharing the knowledge and other factors have no signifiacnec effect on knowledge sharing attitude. Future studies could address the limitations of our research endeavor by broadening the sample size, assessing the opportunity for adopting AI in other HR functions, and including more countries in the sampling and analysis.

Keywords – *Employee attitude towards sharing Knowledge, Social Exchange, Social Capital*

1. INTRODUCTION

In today's era of knowledge organizations have come to understand that knowledge is the factor for gaining advantage driving successful innovations and enhancing overall performance. Knowledge holds importance as the resource within an organization greatly influencing its development. Essentially this knowledge comprises both the expertise and information possessed by employees as the documents stored by the organization.

Knowledge sharing within an organization has a major impact that affects the employees as well as the organization in a positive manner. According to Alavi & Leidner (2001, cited in Chumg et al, 2015) it has been identified that the process of

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knowledge Sharing has had a major improvement in skill of the on the abilities & the employees, it has also resulted in an improvement in innovations. According to Cummings 2004 cited in Rutten et al., 2016) It has been found that the process of knowledge sharing has positively impacted factors such as productivity and performance.

Most knowledge management systems concentrated on finding and recording both explicit and implicit knowledge about the business, focusing on information that was widely available via corporate platforms, such as document management systems, corporate portals, intranets, and knowledge repositories. (Lee, 2015). Employee knowledge can be a significant means of obtaining and preserving a competitive advantage since it is founded on judgment and experience. It is also important to note that a company benefits when its employees share their expertise with other organization members rather than keeping it to themselves (Panahi et al., 2013). The reason knowledge is thought to be one of the sources of organizational competitiveness is covered in much research. There are different theoretical lenses used in those studies which has mixed findings. The aim of this study is to analyze the factors which are prominent in shaping employee knowledge sharing attitude using a comprehensive theoretical model in a context of an Multinational Company (MNC) employees in Sri Lanka.

2. LITERATURE REVIEW

2.1 Social Exchange Theory

The Social exchange theory is where people engage in certain types of behavior to gain rewards and reduce the costs (Blau, 1964; Atkinson, 2020). In this case, humans tend to adopt new types of behavior and keep repeating previous behaviors to increase their rewards and minimize costs. If the reward is not given by the other party people tend to give up the favor given to the other party and if the other party gives the reward as favor this could create extra cycles of this procedure (Blau, 1964; Cropanzano and Mitchell, 2005). This means social exchange theory is a type of behavior caused by human relations based on subjective costs which make people analyze what they gain by a particular behavior and what is the cost of having such a behavior. According to this if a particular behavior has given more rewards in some situations in the past the individual tends to behave the same way in similar situations. (Lovaglia, 1995).

However, a meta-analysis of organizational justice research that was conducted for 25 years, on the other hand, reveals that social exchange theory factors such as organizational commitment, perceived organizational support, and leader-member exchange are crucial to the relationships between justice, task performance, and citizenship behavior. (Alghamdi, 2021).

But when people share their respective knowledge and expertise with each other and expect, reciprocally, to gain more knowledge from others they may do it because of the happiness coming by helping other people or they could do it to increase their reputation as professionals etc.

(Razmarita et al., 2016: Lucas, 2005) So since knowledge is power people may tend to gather more knowledge and then share it with others instead of sharing new aspects that they have learnt so far. (Rahman et al, 2017).

According to the Social Exchange Theory where cost and benefits been discussed this research has identified three variables; perceived reputation enhancement and perceived enjoyment in helping others as benefits of Knowledge sharing and perceived loss of knowledge power as cost based on the literature.

2.1.1 Perceived reputation enhancement

It has been discovered that people require establishing their standing as specialists within a business. One method is to share the professional knowledge that they acquire with their coworkers (Palo and Charles, 2015). Individuals who share relevant knowledge earn the respect of their coworkers and improve their own icon within the organization (Chang and Chuang, 2011). It is considered that having a personal image and a well-known reputation helps people advance in their careers.

While offering advice is frequently associated with kindness, the 'egocentric' approach contends that giving advice allows us to improve our reputation by making others think that they are informed, trustworthy, and indispensable. This raises the intriguing possibility that, guidance is frequently conveyed in the context of benign assistance, it can also act as a more selfish objectives such as raising our value in a particular group, which results in the reduction of the danger of social rejection.

Wasko and Faraj (2005) discovered that in a longitudinal study on factors driving knowledge contribution in an electronic network of practice belonging to the National Legal Association in the United States, the perception of boosting one's professional reputation strongly influences an employee's decision to give knowledge. However, as per Bock et al. (2006) their investigation of factors impacting employees' contribution to electronic knowledge repositories, reputation enhancement had no significant effect on employees' contribution to the electronic knowledge repositories. Therefore, there are mixed findings on how perceived reputation enhancement of sharing knowledge impact employee knowledge sharing behavior.

2.1.2 Perceived enjoyment in helping others

An individual can get a sense of pleasure by assisting others. (Freligh et al, 2002). Individuals frequently assist others without regard for the fact that they will receive something in return. According to them, individuals who provide tangible knowledge do so to demonstrate their pro-social attitudes. Wasko and Faraj (2005), argued that sharing knowledge with other people is a natural motive in people, which they appreciate.

Recent research has also proven the favourable association between the delight of assisting others and the contribution of knowledge. For example, Chang and Chuang (2011) discovered that happiness in assisting others had a considerable impact on knowledge contributors' use of electronic

repositories, as well as the usefulness of the contribution.

Among the knowledge sharing attitude motivator components, reported satisfaction in helping others showed the greatest effect which is consistent with previous studies. (Rahman et al, 2017).

2.1.2 Perceived loss of Knowledge Power

In perceived loss of knowledge power, employees conceal knowledge from the members of the organization in three main ways (Demirkasimoglu, 2015). They are either being ignorant (acting ignorant regarding the knowledge asked from them), evasive hiding (giving incorrect information or making a misleading promise to share knowledge in the future), and rationalized hiding (giving an explanation for why the requested knowledge was not provided or blaming others).

Employees act ignorant or use reasoning to conceal information when the knowledge requested is basic, and they may use the delayed technique when the knowledge required is difficult. Acting ignorant and evasive hiding, on the other hand, do require deception, as opposed to justifiable hiding, which does not always involve lying (Demirkasimoglu, 2015).

According to the hypothesis, individuals attempt to protect valuable resources in order to avoid loss. When employees fear they will lose key resources due to various threats, they will go to great lengths to protect them. The critical resource under discussion here is knowledge, which is considered as a form of power and as a personal advantage over competitors. If this

is the problem, employees may be cautious to provide their expertise to others at work (Anderson et al., 2014) in order to keep the benefits of the knowledge they have, such as protection from being replaced. (Argote, 2011). According to studies, (Chowdhury, 2023) perceived loss of knowledge power increases reasoned concealment while decreasing knowledge-sharing attitudes.

2.2 Social Capital Theory

The concept of social capital can be defined as "the total of the actual and potential resources embedded within, available through, and derived from the network of relationships thar are possessed by an individual person or a social unit" (Nahapiet and Ghoshal, 1998, p. 243). This shows that individuals benefit from social communities and networks. Social capital theory consists of three main parts which are structural, cognitive and relational (Nahapiet and Ghoshal, 1998).

- **Structural social capital (Social Network)**– this aims on getting an idea of the overall this focuses on characteristics of the configuration of connection among workers. This looks at the formal and informal connections between the members, The relationships between them, and the arrangements and interconnectedness between members and other networks. In this study the structural social capital is measured by social interaction ties based on previous studies.

- **Relational social capital (trust)**-this is focused on assets that leverage the social actor's behavior. This focuses on the assets connected to the individuals.

This looks at specific relationships of individuals and tangible and intangible benefits received by the individual through the relationships and connections of the individual such as trust, shared norms, reciprocity, information exchange, and support. (Nahapiet and Ghoshal, 1998). In this study the variable trust has been used to analyse the impact of relational social capital towards the knowledge sharing.

- **Cognitive Social Capital (Shared Goals)** - In an organization it is especially important that all the employees work for the same last end goal. Importantly, the tendency to share goals and intentions with others might support the establishment of social bonds: the efficacy of the interaction itself and the emotional reactions to it may also influence the process of coding others as in group or out group members (Villani et al, 2022). When all the employees participate in achieving the goal it positively impacts on their psychological health which leads them to maintain a good connection with each other. (Yip et al., 2007). In an organization the greater the shared goals the greater the knowledge sharing will be.

2.3. Attitude Towards Knowledge Sharing

The positive tendency of people towards knowledge sharing is thought to be impacted by their attitudes. (Ajzen & Fishbein, 1980). An individual's willingness to participate in knowledge sharing activities reflects their attitudes, therefore the attitude towards knowledge-sharing becomes a very crucial factor in sharing knowledge of an individual. According to the Theory of Planned Behavior (TPB), the attitude towards knowledge sharing is one of the main determinants of intention. By identifying the attitude of an individual towards a particular factor, the individual's overall behavior can be identified (Zainab Kodai and Saeed, 2023).

An attitude towards a behavior can be referred to as the extent of their ability to assess the positivity and negativity of the behavior (Ajzen, 1991). Attitude has become one of the most crucial factors in an organization's behavioral intention, studies have found that the attitude of people towards moral behavior has a direct impact on their moral behavior intention. In large companies, the attitude towards knowledge sharing was said to have a major impact on knowledge-sharing intention within the employees (Bock et al, 2006).

A particular individual's attitude towards a certain behavior type shows the individual's actual behavior and the intention to perform the particular behavior. Individuals will begin to act differently when their attitudes towards a certain behavior type change.

3. METHODOLOGY

This research employs the deductive research approach and data was collected using a structured questionnaire. The questionnaire was developed after examining existing literature on knowledge sharing where Social Exchange theory and Social Capital theory was used as theoretical models. The employees have been selected from a Multinational Company operating in Sri Lanka which is one of the largest

companies producing and distributing a wide range of carbonate and non-carbonated beverages in India and Sri Lanka. Non-probability purposive sampling was used to select the employees after a discussion with the management who are managerial employees since the knowledge shared is critical in their performances in daily activities. Data was collected through visiting the premises and distributing physical questionnaires which is a structured questionnaire with 32 items on a five-point Likert scale (where 1 is strongly disagree and 5 is strongly agree). 60 employees were given the questionnaire and completed in November 2023.

sharing. The completed questionnaires were analyzed using Smart PLS for structural equation modeling (SEM) analysis using partial least squares (PLS). Smart PLS was used to evaluate not only the six hypotheses but the relationships between the variables as well due to the limited sample size.
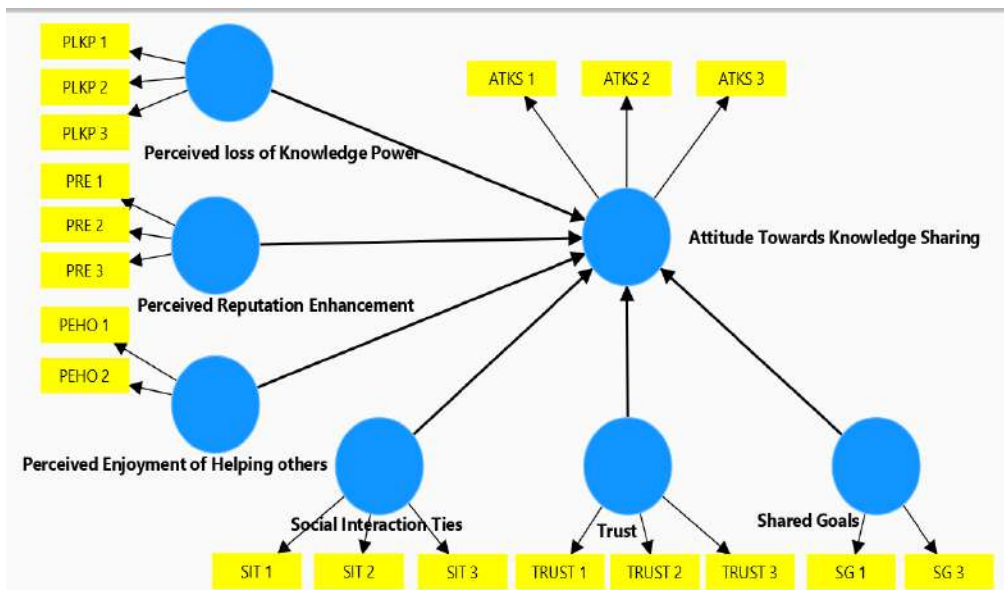
Figure 1: Theoretical Model

The following model in figure 1 was developed by researchers based on available theories and tested two theoretical perspectives (Social Exchange and Social Capital) to test the different factors affecting employees' attitude towards knowledge

4. DATA ANALYSIS AND DISCUSSION

4.1. Measurement Model

Validity and reliability are two metrics used to assess this research's quality. In terms of the model's dependability, assessed the

internal consistency reliability and the reliability of the model's indicators using the composite reliability (CR)/Cronbach's alpha (CA) values and outer loadings values, respectively (Table 1). The outer loadings values of all indicators exceeded Hulland's (1999) lower limit of 0.700, ranging from 0.891 to 0.986 in value. Furthermore, CR and CA values exceeded lower limit of 0.700 (Bagozzi and Yi, 2011).

The aforementioned results indicated high internal consistency, confirming outer model's reliability.

Table1: Measurement model's reliability and convergent validation

Variables	Indicator	Outer Loading	CR	CA	AVE
PLKP	PLKP1	0.932	0.927	0.919	0.860
	PLKP2	0.910			
	PLKP3	0.940			
PRE	PRE1	0.893	0.744	0.625	0.538
	PRE2	0.490			
PEHO	PEHO1	0.910	0.701	0.636	0.727
	PEHO2	0.791			
SIT	SIT1	0.873	0.839	0.830	0.746
	SIT2	0.898			
	SIT3	0.817			
TR	TR1	0.763	0.759	0.730	0.646
	TR2	0.779			
	TR3	0.866			
SG	SG1	0.915	0.464	0.358	0.594
	SG3	0.592			
ATS	ATS1	0.706	0.513	0.515	0.507
	ATS2	0.724			
	ATS3	0.705			

In terms of the model's dependability, assessed the internal consistency reliability and the reliability of the model's indicators using the composite reliability (CR)/Cronbach's alpha (CA) values and outer loadings values, respectively (Table 1). The outer loadings values of Attitude towards Knowledge Sharing (ATS), Trust (TR), Social Interaction Ties (SIT), Perceived Enjoyment of Helping others (PEHO), Perceived Loss of Knowledge Power (PLKP) indicators exceeded Hulland's (1999) lower limit of 0.700, ranging from 0.705 to 0.940 in value. However Shared Goals (SG) and Perceived Reputational Enhancement (PRE) has outer loadings of less than 0.700. According to Ringle eta al., (2023), Indicators with very low loadings (below 0.40) should, however, always be eliminated from the measurement model and generally, indicators with loadings between 0.40 and 0.708 should be considered for removal only when deleting the indicator leads to an increase in the internal consistency reliability or convergent validity. Therefore, the model retained these indictors which are between 0.4 and 0.7 and checked for AVE value. CR and CA values exceeded the lower limit of 0.700 except in SG had very low CR and CA values. However, again its Average Variance Extracted (AVE) value indicates the construct explains 50 percent or more of the indicators' variance that make up the construct (Hair, 2018). Therefore, those indicators with lower indicator loadings retained in the model as the convergence

validity as indicated by the AVE is acceptable at 0.5 level. Thus, the results indicated internal consistency, confirming outer model's reliability.

According to Fornell and Larcker (1981 cited in Hair et al., 2021), a measure of the discriminant validity of the model can be obtained by computing the square root of AVE for each construct and comparing its value to that of the other variables. Each variable's square root of AVE was found to be bigger than the other variables' correlation values and it concludes that the proposed model produces accurate results that correspond to real life, confirming the outer model's validity.

4.2. Structural Model

The structural model reflects the paths hypothesized in the research framework. The structural model is assessed based on the R square value and the significance of paths. The goodness of the model is determined by the strength of each structural path determined by R square value of the independent variables. The value of R square should be equal to or over 0.1 (Falk & Miller, 1992) hence predictive capability is established. According to the final analysis of the above structural model is 0.392 which is above 0.1 threshold. As per the hypothesis testing/path coefficients (Table 2) the only one hypothesis is accepted which was the impact of trust on attitude towards knowledge sharing. (β = 0.45, p = 0.000)

Table 2: Hypothesis testing

Hypothesis	Path	Beta coefficient	T statistics	P values	Supported
H1	PEHO -> ATS	0.151	1.012	0.156	No
H2	PRE -> ATS	0.13	0.873	0.191	No
H3	PLKP-> ATS	-0.012	0.452	0.326	No
H4	SG -> ATS	0.138	1.052	0.146	No
H5	STI-> ATS	0.101	0.647	0.259	No
H6	TR -> ATS	0.45	4.115	0.000	Yes
H7	PEHO -> ATS	0.151	1.012	0.156	No

4. CONCLUSION

This study is an extended experimental investigation on the testing on employee attitude towards knowledge sharing within an organization using two theoretical perspectives namely, Social Exchange Theory (SET) and Social Capital Theory (SCT). As the Social Exchange theory does not capture fully the attitude towards knowledge sharing as suggested by the literature the Structural, Relational and the cognitive social capital constructs have been introduced to better explain the attitude towards knowledge sharing. The model explain 39% of the attitude towards knowledge sharing and it has been identified that the employee trust plays and important role in attitude. Bapuji and Crossan (2005)

suggested that the more trust there is within the people, the more they are willing to participate in collaborative interactions. The ability to establish an environment for knowledge sharing within an organization mainly depends on the importance of interpersonal trust within the organization (Nonaka 1994). As the other variable shows an insignificant impact towards shaping employee knowledge sharing attitude, future research may focus on other factors as suggested by theories such as technology adoption.

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A Study on Digital Platform Integration for Design Innovation

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ABSTRACT

Fostering creativity in design education is essential to prepare students for the evolving demands of the industry. This study investigates the impact of innovative teaching techniques, specifically the use of digital platforms, on enhancing creativity within design pedagogy. Conducted with 25 interior design students in five groups, the study explores how collaborative digital tools, such as MURAL and SketchUp, influence students' design processes, ideation, and prototyping. Observational data indicated that these tools facilitated rapid development of creative ideas and refined designs, suggesting that integrating digital platforms in design education enhances students' collaborative creativity and practical problem-solving abilities.

***Keywords* – Innovative tools, design process, online platforms**

1. INTRODUCTION

Design education is placed at the center of the design education (Afacan, 2018). In current context, many digital platforms are available to support the design process of students (Yurtkuran et al., 2013). This study is focused on exploring the integration of digital platforms to foster creativity of students. In today's dynamic design landscape, creativity remains a core skill for design students, particularly in fields like interior design, where solutions need to be both functional and aesthetically pleasing (Açikgöz, 2015). As the role of digital tools expands, there is a growing need to understand how these platforms can be integrated into design pedagogy to enhance students' creative thinking and design processes. Through this study , we examined the use of digital platforms, MURAL and SketchUp, in fostering creativity among interior design students by facilitating ideation, prototyping, and collaborative decision-making.

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2. CREATIVE THINKING

Creative thinking in design education is essential for developing innovative solutions that respond to user needs and aesthetic principles (Alawad, 2014). Prior studies have shown that digital tools offer unique advantages in design education, such as flexibility, real-time collaboration, and access to a wide array of resources (Abeer Alawad et al., 2021; Al-Qawasmi, 2005). Digital platforms like MURAL and SketchUp have emerged as valuable tools for fostering creativity and collaborative learning, allowing students to visualize, iterate, and refine their ideas quickly.

2.1 Digital platforms for collaboration and prototyping

For this study we used MURAL, which is a collaborative design platform which supports online, distance collaboration. MURAL platform facilitates real-time collaboration, brainstorming, and ideation. It offers an array of visual tools, including sticky notes, templates, frameworks, and diagramming capabilities, which allow users to structure and share their ideas with others seamlessly.

The other digital tool used is Sketch up platform. Sketch up is a digital prototyping tool which is supportive in designing digitally. In design education, SketchUp helps students translate 2D concepts into 3D models and experiment with design elements in real-time.

3. PROBLEM STATEMENT

Even though, many collaborative and prototyping techniques available in design

pedagogy, it is important to investigate how these could support on fostering creativity of students.

3.1 Research Question

1. How the digital collaboration contributes on developing novel ideas among students?

4. RESEARCH METHODOLOGY

The study was conducted with 25 third-year interior design students. To facilitate group-based collaborative work, the students were divided into five groups of five. The study employed a qualitative observational approach to assess the impact of digital tools on students' design processes (Charmaz & Henwood, 2019). Each group was tasked with a design challenge that required them to ideate, prototype, and refine interior design concepts over a series of sessions. The groups were instructed to use MURAL for ideation and brainstorming, and SketchUp for prototyping and 3D visualization. Students were given six studio days to complete their design projects. During this period, the groups were observed to assess how they utilized the digital tools to develop and refine their ideas. Data were collected through direct observation, student reflections, and group feedback sessions.

4.1 Data Analysis

Observational notes, student feedback, and digital artifacts from MURAL and SketchUp sessions were analyzed to assess changes in creative output, collaborative dynamics, and design quality. The study used a thematic analysis to identify patterns in how the digital platforms influenced group creativity and the overall design process.

4. RESULTS

Themes	Categories	Codes
Innovative idea development	Diverse perspectives	Shared insights
		Varied design influences
		Rapid brainstorming
	Idea generation	Many shared information
		Free and joyful engagement
		Developing non-conventional ideas
	Risk taking	Safe space for experimentation
		Testing non-conventional ideas
Real time collaboration	Instant feedback	Peer review
		Real time feedback loops
	Collective problem solving	Joint decision making
		Building on others' ideas
	Group Cohesion	Equal contribution
		Sense of ownership
Idea visualization	Concept Mapping	Visual mind maps
		Structuring and organizing ideas
	Prototyping and refinement	3D modelling and adjustments
		Iterative development
Skill development	Digital Proficiency	Learning to use new platforms
		Skill building on digital tools
	Collaboration skills	Effective communication
		Remote teamwork
	Feedback integration	Adopting based on feedback
		Self-assessment and growth
Enhanced creativity	Innovative problem solving	New approaches to tasks
		Cross disciplinary thinking
	Originality	Out of the box thinking
		Testing solutions

Table 1. Table of codes, categories and themes

The results of this study are presented based on thematic analysis, which identified key themes, categories, and codes reflecting the impact of digital collaboration on fostering creativity in design education. The thematic chart revealed five primary themes: Innovative idea development, Real-Time Collaboration, Idea Visualization, Skill Development, and Enhanced Creativity. Each theme is described below, with findings substantiated by the observed behaviors and feedback from participants.

Digital collaboration significantly contributed to creative ideation among students by fostering an environment rich with diverse perspectives and rapid idea generation. Students expressed that sharing

insights from different backgrounds and design influences helped broaden their thinking and expand the range of ideas considered. Working collaboratively with peers introduced varied viewpoints, which encouraged students to step out of their own design paradigms and explore new, innovative directions.

Real-time interaction on digital platforms played a crucial role in enhancing group cohesion and collective problem-solving abilities. Students appreciated the immediate feedback loop provided by the platform, which enabled them to evaluate and improve ideas in real time. Peer review and instant suggestions enriched the design process, as students could refine their concepts based on constructive input from others.

The digital workspace encouraged equal participation, with each member contributing actively to the project. Students expressed a sense of ownership and commitment, which enhanced group cohesion and fostered a stronger sense of shared purpose in their projects.

The use of digital platforms enabled students to map and visualize their ideas, leading to clearer concept development and prototyping processes. MURAL allowed students to create mind maps and organize ideas visually, which made it easier to identify connections and relationships between concepts. This spatial organization helped students structure their thoughts more effectively, leading to coherent and comprehensive design proposals. SketchUp, used for 3D modeling, facilitated a seamless transition from conceptualization to tangible design. Students were able to rapidly create prototypes and make iterative adjustments, refining their designs as they progressed.

This iterative approach contributed to the development of higher-quality, more thought-out final products.

The study found that students developed both technical and collaborative skills through their engagement with digital platforms.

5. DISCUSSION

The results indicate that digital collaboration platforms play a significant role in fostering creativity among design students. By providing tools for ideation, visualization, and real-time feedback, platforms like MURAL and SketchUp enable students to develop novel ideas, refine their designs, and build essential skills for future professional practice. These findings suggest that integrating digital collaboration into design education not only enhances students' creative output but also prepares them for the collaborative nature of modern design industries.

This study supports the integration of digital platforms into design pedagogy as a means to foster creativity and collaboration. The observed impact on student creativity and the rapid development of well-formed design ideas suggest that digital tools offer substantial benefits in design education. Future research could expand this study to include other digital tools and assess their impact on different design disciplines.

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How Motivational Factors Affect Employee Engagement?
Evidence from a Selected IT Company in Sri Lanka

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ABSTRACT

Motivation and employee engagement are critical factors for long-term success and growth of organizations in the IT industry. Motivated employees promote creativity and quality, whereas engaged employees increase productivity and foster a positive work atmosphere. This study is aimed at identifying the impact of motivation on employee engagement at a leading advance technology solution provider in Sri Lanka . Currently the company is facing several issues such as less productivity, higher employee turnover and withdrawal of some important projects due to the observable reduced employee engagement. The research adopts a quantitative approach followed by a positivistic philosophy and the sample of the study was 108 employees representing all divisions of the company. The sample technique adopted for the study was stratified sampling method. A self-administered questionnaire on a five-point Likert scale was used to gather the data. The study employs descriptive statistics, correlation analysis, and linear regression to achieve the research objectives. According to the descriptive statistical results, a significant dissatisfaction among the employees is depicted regarding their motivational factors and overall employee engagement level. The results of the correlation analysis reveal a positive association between the dimensions of motivation and employee engagement. Notably, job security, recognition, working conditions, and job characteristics all exhibit strong relationships, with job security appearing as the most influential aspect. Salary and benefits have a minor impact on employee engagement at the selected company compared to the other motivational factors. These findings are further strengthened by the results of the regression analysis showing a significant positive impact of motivation dimensions on employee engagement. Based on the findings of the study, the research suggests to improve motivational factors, hence increasing employee engagement. These suggestions include building clear communication channels about the company's stability and goals, adopting formal recognition programmes, and fostering a supportive work environment through worker associations and flexible work arrangements. However, since the study findings are limited to a single organization, the researcher suggests increasing the sample size from diversified companies to get more effective insights about the association between motivation and employee engagement.

Keywords: **Motivation, Employee Engagement, IT Industry, Job Security, Recognition**

1. INTRODUCTION

Employee motivation is a critical aspect for the success of any organization. Motivational factors serve as an important function for cultivating a work environment where individuals are eager to work with passion, interest, enthusiasm, and innovation. Employees who work in such an environment feel highly satisfied both individually as well as a group. They are also loyal, responsible, and confident in their ability to achieve both personal and organizational goals (Shaaban, 2017).

Engaged employees have a deep emotional attachment to their organization and they are enthusiastic to witness their employer's success without limiting to their contractual obligations (Kompaso & Sridevi, 2010). With the ever-changing volatile nature of the business environment and the increased diversity in labour force and their expectations, the organizations are currently facing a lot of issues in ensuring employee engagement to enhance the overall organizational performance.

Over the last few years, technology has recreated the connectedness between individuals, businesses, consumers, and governments via the Internet and related sources. The significance of information technology (IT) in this change is evident, and it has evolved as the most complicated strategic component within this process (Joseph et al., 2018). Increasing demand in this industry is observed through consumer and corporate demands, as well as economies of scale that contribute to increased growth in the sector. However, there are still a few incidents of IT services or projects failing owing to bad quality, unfulfilled needs, dissatisfied customers, budget concerns, and so on. One of the causes of the failure is the presence of inadequately engaged staff in the initiatives (Pandita & Singhal, 2017).

Xanthopoulou et al., (2009) has emphasized that employee engagement is a major determinant of a company's overall revenue, profit, and growth. On the other hand, negative employee engagement can result in adverse employee related outcomes such as job dissatisfaction, reduced organizational commitment and increased employee turnover (Saks, 2006; Saks, 2019). As per the findings of Engidaw (2021) and Hanif et al. (2015), employee motivation plays a special role in shaping employee engagement at the workplace. This is supported by the findings of the studies conducted by Christian et al., (2011), which suggests that employee engagement plays a motivational role that is influenced by both personal and environmental factors.

Even though different studies have indicated an association between motivation and employee engagement (Khan, 2011; Engidaw, 2021; Tan et al, 2021), yet there exists a variation in the degree of relationship and impact on employee engagement between intrinsic and extrinsic motivational factors (Khan and Iqbal, 2013). Thus, it is challenging for organizations to identify to which factors of motivation they should give priority when formulating policies and strategies.

The selected company for this study is an Advanced Technology Center located in Colombo, headquartered in San Jose California. The company is specialized in providing comprehensive technology

consulting and engineering services, including hardware and software to its digital solution seeking partners around the world. The company endeavours to establish a work environment that is diverse, inclusive, and prosperous for all its employees by fostering a culture of customer-centric innovation, professionalism, ongoing learning, self-care, and integrity.

1.1 Problem of the study

During the past financial year 2022/2023, the selected IT company has observed a drop in their employees' engagement level for their jobs and the company has lost several important projects they received due to the incapability of meeting project deadlines. In addition to that, the employee turnover of the company has also grown considerably compared to the previous years and many of the employees who performed well during the past years are among these leavers.

According to the company data (Annex 01), it was observed that the company is undergoing some critical issues related to its performance indicators and the major concern aroused by the management of the selected IT company was that employees are not emotionally committed and dedicated to their job even though the company incurs a considerable cost in providing different benefits for them.

Therefore, based on the available performance statistics, management opinions and the literature findings, this research attempts to address the problem of "Identifying the Impact of Motivation (IV) on the Employee Engagement (DV) at the selected IT company".

1.2 Objectives of the study

The objectives of this study can be discussed as general objectives and specific objectives as follows.

1.2.1 General Objective

The main objective of this study is to identify the Impact of Motivation (IV) on the Employee Engagement (DV) of employees at the selected IT company.

1.2.2 Specific Objectives

In addition to the above main objective, the researcher expects to achieve the following specific objectives through this study.

- To investigate the relationship between Motivation (IV) and the Employee Engagement (DV) of employees at the selected IT Company.

- To identify the most significant factors of motivation that contribute to Employee Engagement at the selected IT Company.

- To recommend practical solutions to enhance Employee Engagement at the selected IT Company by improving motivation factors.

1.3 Research Questions

To achieve the research aims mentioned above, this study seeks to answer the following research questions.

1. What is the Impact of Motivation (IV) on the Employee Engagement (DV) of employees at the selected IT Company?

2. What is the relationship between Motivation (IV) and the Employee Engagement (DV) of employees at the selected IT Company?

3. What are the most significant factors of motivation that contribute to Employee Engagement at the selected IT Company?

4. What are the practical solutions to improve the Motivational factors for enhancing Employee Engagement of employees at the selected IT Company?

1.4 Significance of the Study

The field of Information Technology is one of the most dynamic and constantly changing industries with unique challenges and opportunities inherent to it (Pandita & Singhal, 2017). Thus, it is essential for the companies in this industry to pay special attention to the key employee aspects that impact on their business in order to face the challenges directing from the industry as well as to maintain a good customer satisfaction level by meeting their expectations (Sanyal & Biswas, 2014).

The empirical findings of this research would be significant since it would broaden the research knowledge on employee motivation and employee engagement and empower the future researchers to conduct more comprehensive studies with a wider range of variables. The professionals in the industry of the same also could relate these results with their workplace situations to make effective strategic decisions on employee-related concerns regarding motivation and employee engagement in their organizations.

1.5 Scope and Limitations of the study

Since this study aims to investigate the impact of motivation on employee engagement at the selected IT company, this study considers all the non-managerial employees of the selected IT company, and the results of this study are specific to the context being addressed.

However, the present study is limited by its exclusive emphasis on the selected IT company, hence potentially limiting the applicability of its findings to other sectors or contexts. As the study uses employee self-reported data, response biases may be created compromising the validity of the findings. Further, the depth of research and the capacity to investigate additional contextual elements influencing motivation and engagement may be limited by time and resource constraints. External factors outside of the scope of this study, including general economic conditions or difficulties unique to a given industry, are not specifically addressed but could have an impact on the results.

1.6 Ethical Considerations

As per the request of the company management, the researcher has not specifically mentioned the name of the company selected for the study. Instead, it is named as 'the selected company'.

Further the data collection for the study has been conducted anonymously and non for the data has been manipulated based on any biasness.

2. LITERATURE REVIEW

2.1 Motivation

Employee motivation is a critical concern for businesses and society since it significantly impacts individuals as well as organizations (Tan et al., 2021). According to Peters (2015), the term motivation has emerged from the Latin verb movere, with

the meaning "to move." In broad perspectives, motivation is understood as something that initiates, sustains, and assists us complete tasks. Robbins and Judge (2007) has explained motivation as "the processes that determine an intensity, direction, and persistence of the efforts of an individual towards achieving a specific goal."

According to Shantz and Latham (2011) and Lauby (2005), motivation is a psychological process that drives a person's behaviour and reactions in order to help them satisfy certain unmet needs, and it is what provides employees with the impulses and directions they require to fulfil their responsibilities. Employees are driven to perform better by motivation, which is intricately tied to desire and ambition; however, studies suggest that employees have both intrinsic and extrinsic motivations (Timoti, 2020).

2.1.1 Theories of Motivation

2.1.1.1 Maslow's Hierarchy of Needs Theory

Abraham Maslow's motivation theory suggests a hierarchy of human needs encompassing five levels of needs: physiological, safety, social, esteem, and self-actualization which a person needs to fulfil one after another (Robbins and Judge, 2016). Physiological needs, including food and shelter, are essential and provided by salary and a stable work environment. Safety needs include both physical and economic protection, which are met by benefits such as retirement plans. Social needs include a sense of belonging and positive interactions at work. Esteem needs involve acknowledgment and self-respect, but self-

actualization indicates the desire for personal fulfilment. To effectively motivate employees, managers must recognize their present hierarchical level and meet their requirements accordingly (Maslow, 1954).

2.1.1.2 Herzberg's Two Factor Theory

Frederick Herzberg's Two-Factor Theory distinguishes between inherent and external variables that contribute to work satisfaction and discontent. Achievement, recognition, responsibility, and progress are all motivational variables that promote pleasant sentiments and self-actualization, hence improving performance (Robbins and Judge, 2016). However, simply being there does not ensure productivity. On the other hand, hygienic elements like business regulations, supervision, compensation, and relationships with coworkers contribute to a psychologically unhealthy work environment, lowering unhappiness when it exists. While hygiene elements are not very motivating, their absence or mismanagement can result in severe discontent. To successfully inspire people, managers should prioritize elements connected to the actual work, or the advantages obtained from it (Herzberg et al., 1968).

2.1.1.3 ERG Theory

ERG theory, developed by the psychologist Clayton Alderfer, is a human motivation theory that divides human needs into three layers as existence, relatedness, and growth. Alderfer introduced this idea putting one step forward to Abraham Maslow's Hierarchy of Needs, stating that needs are not rigidly hierarchical and can function concurrently and interactively (Arnolds &

Boshoff, 2002). Existence needs are Maslow's main requirements, which include food, shelter, safety, and physiological well-being. ERG theory defines existence requirements as the essentials for survival and physical well-being. Social interactions and interpersonal relationships are some examples for the relatedness needs. This encompasses a need for meaningful connections, love, affection, and a sense of belonging within groups, communities, or organizations. Feeling linked to people and having supportive social networks help to fulfil relatedness needs. Growth needs include the need for personal development, self-improvement, and the realization of one's full potential. It involves exploring challenges, looking for personal and professional growth opportunities, and participating in activities that promote creativity, success, and mastery (Yang et al., 2011).

2.1.1.4 Theory X and Theory Y

David McGregor offered two opposing management perspectives, known as Theory X and Theory Y (Latham, 2007). Theory X claims that employees are innately lazy, require coercion to be productive, eschew responsibility and ambition, and prioritize security. McGregor stated that these beliefs are the outcome of managerial methods rather than intrinsic human nature. Based on more realistic assumptions about human nature, Theory Y says that people like their jobs, perform effectively with less supervision, can take on responsibility, and excel at decision-making. McGregor proposed implementing Theory Y by expanding employment opportunities, encouraging responsibility, addressing

social and egoistic demands, and involving employees in decision-making. Despite its conceptual merits, the theory was criticized for a lack of empirical proof (McGregor, 1969).

2.1.2 Factors Affecting Employee Motivation

2.1.2.1 Salary and Benefits

Asaari et al. (2019) has described salary as the form of payment made by an employer to an employee, either it is specifically mentioned or not in the contract of employment and it is the component that largely determines the income of a person. According to Tan et al. (20210), income is one of the crucial factors of human life that have a significant influence on employee motivation. Income in terms of salaries and wages enables workers to satisfy both their fundamental and more sophisticated requirements (Luthans, 2011).

Vu Minh Hung (2017) has suggested that Employee motivation is affected not only by the amount of pay given to employees, but also by their perceptions regarding the pay equity and the pay processes utilized to distribute earnings among employees. Jeha et al. (2022) has further emphasized that salary and bonuses have the greatest effect on employee motivation, and it addresses how expectations of personal life affect employee motivation at work. Employees typically consider salary as a measure of their contribution and the value of them to their organization, thus in fact this affects their level of motivation at work (Asaari et al., 2019).

2.1.2.2 Job Security

According to the Maslow's Hierarchy of Needs theory (Maslow, 1943) and two factor theory discovered by Herzberg (1987), job security is one of the important aspects among employee motivation. Kovach (1987) has emphasized that stability of the job, less volatility, and absence of fear for losing a job are supportive in boosting employee motivation, especially among blue-collar workers, and it is the most important prominent need among white-collar workers as well.

As per the findings of Zopiatis and Constanti (2007), job stability is a key motivator and the position of an individual within the organizational structure influences his or her level of motivation. Miller et al. (2001) has further suggested that job security of employees has a major impact on worker performance levels and low job security leads to lower employee motivation. Altinay et al. (2019) has emphasized that work engagement is closely related to job security and the employees are motivated to work if their jobs are secured.

2.1.2.3 Job Characteristics

Hackman & Oldham (1976) has discovered that a well-designed work model may inspire people, increase job satisfaction, and improve productivity. Koskinen (1995) suggests that employee motivation is linked to the diversity at workplace. The employees who execute a variety of tasks are more likely to be motivated to work than those who conduct repetitive tasks. As per the findings of Quyen (2015), interesting work leads to increased enthusiasm and attentiveness among employees. Hadi and

Adil (2010) have identified job characteristics as a major determinant of intrinsic motivation, and job satisfaction and similar results has been presented by the studies conducted by Sultan and Sarwat (2012) demonstrating that employee motivation and work characteristics are deeply related.

2.1.2.4 Recognition

According to Brun & Dugas (2008), most employees seek recognition from their superiors, colleagues, and consumers. Employees recognize this as a critical demand in the workplace, as well as in organizational settings and the society (Brun & Dugas, 2008). Asaari et al. (2019) has stated that recognition is effective in companies that have a strong supportive culture, psychological expertise, and apply sound incentive systems to employees, enhancing their work ethic and helping them achieve several key milestones in their careers. Krishnaveni and Monica (2018) has further pointed out that employee recognition has increased its importance as a component of an organization's HR strategy, and it plays a key role in enhancing productivity and workplace cohesion. Engidaw (2021) on the other hand highlights that giving recognition to employees on their performance is crucial for enhancing employee commitment and participation.

2.1.2.5 Working Environment

Working environment is the context within which workers carry out their job responsibilities (Hanaysha, 2016). Studies have shown that in order for people to perform successfully and stay motivated in organizations, they require a creative,

challenging, and enjoyable work environment (Setiyani et al., 2019; Judeh, 2021; Korzynski, 2013). Workplace environmental conditions have an impact on employee engagement and motivation. Setiyani et al. (2019) claim that a positive and supportive work environment could improve employee motivation and engagement among the Generation Y millennials. A favourable work environment that promotes opportunities for progression, recognition, and a sense of belonging is a powerful motivator, that is beneficial to increase employee engagement at workplace (Saks, 2006).

2.2 Employee Engagement

Joseph et al. (2018) has defined Employee engagement as a discrete and independent concept which consists of cognitive, emotional, and behavioural elements associated with the individuals' role performance. It has a beneficial effect on employees and increases their interest in their employment. Further employee engagement is essential for achieving employee satisfaction (Abraham, 2012). Employee engagement is defined by Iddagoda et al. (2016) as the degree to which an employee becomes cognitively, emotionally, and behaviorally interested in the job and the organization.

According to Kahn (1990) as cited in Saks (2006), employee engagement requires workers to be mentally available while performing their organizational roles. Employee engagement is crucial for the organizations as they rely entirely on them. Employee engagement leads to effective operations by fostering mutual commitment between organizations and their employees

(Andrew and Sofian, 2012). Employee engagement promotes great performance, resulting in superior services and more client attraction. An engaged employee is the most precious asset for any organization since such employees are the key drivers of success in business activities (Tharika et al., 2021). Engaged staff leads to increased dedication and productivity for the organization and such employees create value for organizations. Therefore, organizations should focus on enhancing employee engagement. Otherwise, it might pose the greatest danger to the organization's success (Engidaw, 2021).

2.3 Empirical Findings on Motivation and Employee Engagement

Brown (1996) has identified that employee engagement has a significant association with motivation, supervisor participation and consideration, career commitment, and work involvement. According to Hewitt (2013), the factors that influence engagement include quality of life, work, people, opportunity, overall rewards, and organizational practices. Swarnalatha & Prasanna (2013) identified several global drivers of employee engagement, including motivational factors such as career growth opportunities, safety, organizational support, knowledge, rewards, and recognition.

Both intrinsic and extrinsic motivation could be used to predict an employee's level of engagement at work. Intrinsic motivation is derived from extrinsic motivators such a positive work environment, demanding assignments, an adequate wage, and so forth (Putra et al., 2017). Both extrinsic and intrinsic motivation and employee

engagement were shown to be positively correlated in Khan and Iqbal's (2013) study. Moreover, it was shown that employee engagement was significantly enhanced by both intrinsic and extrinsic motivation by the studies conducted by Engidaw (2021). As per the findings of the study, employee engagement was more dependent on extrinsic motivational factors than by intrinsic motivational drives.

According to a study conducted by Rich et al. (2010) investigated the link between motivating factors and employee engagement. They discovered that intrinsic motivating elements including autonomy, mastery, and purpose were positively associated with employee engagement. The employees that reported higher levels of intrinsic motivation were more involved in their work, had better job satisfaction, and were more committed to their organizations. The same findings were revealed by the studies conducted by Saks (2006) depicting that motivational element such as job autonomy, opportunity for skill development, and recognition are important predictors of employee engagement. This study emphasized that the employees who perceived higher amounts of motivating elements in their workplace reported higher levels of engagement.

Furthermore, the studies conducted by Riyanto et al. (2021) regarding the mediating role of employee engagement on work motivation, job satisfaction and employee performance has discovered that in order to obtain enhanced work performance, organizations must actively engage employees by increasing motivation and ensuring their job satisfaction.

According to the results of the studies conducted by Shkoler and Kimura (2020), both intrinsic and extrinsic motivation positively influence on employee engagement in industrial organizations.

Ewool et al. (2021) have found that competitive salaries and comprehensive benefits packages have enhanced employees' financial satisfaction, leading to higher emotional commitment and engagement. Firdaus et al. (2023) emphasized that job security is crucial, as employees who feel secure are more likely to have invested in their work. Job characteristics, such as autonomy and task variety, have also shown to play a key role, with Hidayat (2023) having noted that meaningful job design enhances intrinsic motivation and engagement. Recognition, as Presslee et al. (2023) have suggested, fosters a sense of belonging, while a positive working environment, as Sawir et al. (2021) have argued, has promoted trust and collaboration, further boosting employee engagement. These findings have indicated that a combination of financial, psychological, and environmental factors is essential for driving engagement in today's workforce.

By referring to the above empirical findings it is seen that there is an association between motivation and employee engagement. However, the studies conducted by Shkoler and Kimura (2020) have suggested that these studies have further revealed that employee positions and the country differences influence the relationship between motivation factors and employee engagement.

Even though many studies have been conducted on the relationship between motivation and employee engagement in the foreign contexts (Shkoler and Kimura, 2020; Riyanto et al. (2021; Goel and Rashmi (2023); Engidaw, 2021; Kahn and Iqbal, 2013), only a few studies have been conducted in this regard in the IT sector of Sri Lanka (Mayuran & Kailasapathy, 2020). Hence this study aims to address that empirical gap by conducting a study on the impact of motivation on employee engagement at a selected IT Company in Sri Lanka.

3. METHODOLOGY

3.1 Conceptual Framework

The conceptual framework of the study is related to the research intent, objective, and problem statement. It also provides a strong basis for collecting relevant evidence to prove or disprove the argument presented with minimum expenditure of time, effort, and money, essential for a critical investigation (Sekaran and Bougie, 2009). The literature review presented in Chapter two provides meaningful insights for the researcher to develop a conceptual framework for this study that helps carry out this study efficiently.

The following hypothetical model in Figure 3.1 is developed to analyze the impact of motivation on employee engagement at the selected IT company. According to this model, the dimensions of motivation; salary and benefits, job security, job characteristics, recognition and working environment are considered as independent variables (Tan et al., 2021), whereas

employee engagement is taken as the dependent variable.
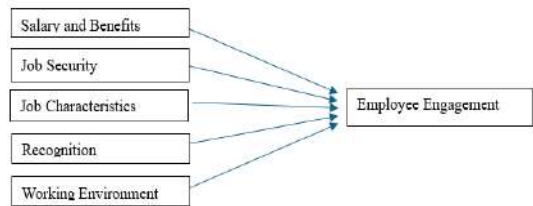
Figure 3. 1 : Conceptual Framework
Source: developed by Author

3.2 Hypotheses

Based on the findings of the reviewed literature, the researcher has developed the following hypotheses to achieve the objectives of the study.

H_1: Salary and benefits significantly impact on employee engagement at the selected IT Company

H_2: Job security significantly impact on employee engagement at the selected IT Company

H_3: Job characteristics significantly impact on employee engagement at the selected IT Company

H_4: Recognition significantly impact on employee engagement at the selected IT Company

H_5: Working environment significantly impact on employee engagement at the selected IT Company

3.3 Operationalization of Variables

The operationalization of the independent variables is done based on the Maslow's theory of Needs Hierarchy, Herzberg's Two Factor Theory and ERG theory (Tan et al., 2021) and the dependent variable which is the employee engagement is measured

through Gallups 12 standard questions for measuring employee engagement (Khan and Iqbal, 2013).

3.4 Research Design

The study uses a descriptive research design, with a cross-sectional method in a natural research environment. Hypotheses are developed based on the literature findings, with the objective of discovering the links between motivating factors and employee engagement. The population consists of 250 employees whereas the sample is composed of 152 employees (Krejcie & Morgan,1970) with a stratified sampling technique used to ensure representation of all the divisions of the company. The data is gathered using a self-administered questionnaire with a Likert scale and is analysed with SPSS software.

4. DISCUSSION OF THE FINDINGS

As per the results of the descriptive studies, when referring to the mean values and their standard deviation coefficients, it is revealed that that employees at the selected IT Company are generally not satisfied with level of motivational factors (salary and benefits, job security, job characteristics, recognition and working environment) and the level of employee engagement at the company is considerably low.

Further, the findings of this study have suggested that there is a strong positive relationship between the factors of motivation namely; salary and benefits, job security, job characteristics, recognition and working environment, and employee engagement at the selected IT Company and the findings are summarized in below Table 4.1.

Table 1: Pearson Correlation Coefficients

Dimension	Pearson Correlation Coefficient
Salary and Benefits	0.521
Job Security	0.902
Job Characteristics	0.793
Recognition	0.832
Working Environment	0.806

The results of the regression analysis have further revealed that the aforementioned factors of motivation have a significant impact on employee engagement at the selected IT Company through statistically significant results. Accordingly, all the hypotheses (H_1, H_2, H_3, H_4 and H_5) were accepted.

Based on the findings of the regression analysis, the researcher developed the following equation regarding the impact of motivation on employee engagement of the employees at the selected IT Company.

$$Y= \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \beta 4X5 + ei \qquad [1]$$

$$EE= 0.139 + 0.186SB + 0.609JS + 0.232JC + 0.521R + 0.463WE + ei \qquad [2]$$

EE   - Employee Engagement

SB   - Salary and Benefits

JS   - Job Security

JC   - Job Characteristics

R   - Recognition

WE   - Working Environment

The studies conducted by Anitha (2014) on the determinants of employee engagement has identified that the salary and benefits of employees play a vital role in employee engagement and the same results have been discovered by Hewitt (2013) and Khan and Iqbal's (2013) confirming the findings. However, according to this study, the salary and benefits have shown a moderate relationship towards employee engagement and the impact is not so strong (b = 0.186). This is basically due to employees of the selected company getting their salaries and benefits on time without delay and the increments are given annually on a regular basis.

Many previous studies conducted on the influence of job security on employee engagement has explained that there is a strong relation among these two variables (Wang et al., 2015; Swarnalatha & Prasanna, 2013; Rich et al., 2010; Khan and Iqbal's, 2013). These results have been confirmed by the findings of this study showing a very strong relationship among the two variables (r = 0.902) and a significant impact (b = 0.609) at the selected company.

According to the findings of Saks (2006), Shkoler and Kimura (2020) and Rich et al. (2010), the job characteristics are found to be antecedents of employee engagement and the same results have been identified by this study showing a positive relationship and impact. However, when the regression coefficient (b=0.232) of the study is concerned, it shows that the impact of job characteristics of the employees in the selected company is not so strong.

Recognition has been identified as a key factor that influences employee engagement

in many studies (Krishnaveni and Monica, 2018; Riyanto et al., 2021; Shkoler and Kimura, 2020; Saks, 2006). These findings were confirmed by the results of this study depicting a strong relationship between the variables (r = 0.832) and a significantly positive impact of recognition on employee engagement (b=0.521).

In addition to the above factors of motivation, the working environment is found to be an effective element in enhancing employee engagement. The studies conducted by Setiyani et al. (2019), Putra et al. (2017), and Hanaysha (2016) have discovered this effect, and the results of this research study are also aligned with these showing a strong positive relationship (r=0.806) and an impact (b=0.463) among working environment and employee engagement at the selected IT Company.

Therefore, based on the findings of this study, it is clear that lack of job security, recognition and working environment conditions are found to be the most significant motivational factors that have result in the low level of employee engagement at the selected IT company while the job characteristics and salary and benefits have a considerably less influence on this issue.

5. CONCLUSION AND RECOMMENDATIONS

This study suggests that the companies should pay special attention on improving the sense of job security and trust on the future measures of the company among the employees, recognize and appreciate the good work of employees in a more sensible manner while improving a supportive

working environment in order to enhance employee engagement.

Hence it is the responsibility of the management to establish clear communication channels about their company's stability and future objectives. Regular updates on the organization's performance and direction can help to reduce ambiguity. Offering training and upskilling opportunities can also help employees gain confidence in their capacity to adjust to changing conditions (Wang et al., 2015). Furthermore, creating a supportive environment in which employees feel appreciated and heard can increase their commitment to the organization and build a sense of loyalty.

In addition to this, formal recognition schemes could help to recognize employees' efforts and successes. These initiatives could include monthly staff awards, performance bonuses, or public acknowledgment during team meetings. However, recognition should not be limited to official programmes. Thus, regular, genuine praise from managers and peers can have a significant impact on morale. Encouraging a culture of gratitude and peer appreciation can result in a healthy workplace environment in which employees feel valued and motivated to succeed (Krishnaveni and Monica, 2018).

Moreover, the HR departments can conduct surveys or focus groups to solicit direct feedback from employees about their workplace preferences and needs. Improvements that can be implemented based on this feedback include ergonomic furniture, sufficient lighting, comfortable break rooms, the formation of friendship clubs, and so on. Flexible work schedules

such as flexible hours, remote working etc. can also contribute to a more welcoming workplace environment (Setiyani et al., 2019). Furthermore, encouraging open communication and collaboration can foster a welcoming and inclusive atmosphere in which employees feel supported and engaged (Hanaysha, 2016).

6. FUTURE RESEARCH DIRECTIONS

As this research study was conducted in the selected IT company, which is a single company in the IT sector of Sri Lanka and the sample size was confined to only 50 responses, the generalizability of the findings of this research is limited. Therefore, further research studies are suggested to increase the sample size and use a large and more diverse sample in different organizations within the same sector as well as in other industries to identify the impact of employee motivation on employee engagement.

Further, the researcher has only considered salary and benefits, job security, job characteristics, recognition and working environment as the dimension of motivation, but apart from these, there are many other dimensions of employee motivation. Therefore, it is suggested to include more dimensions of motivation for further studies and adopt a mixed method including both qualitative and quantitative approaches to get more reliable results.

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ANNEXURES

Annex 01

Table 1 : Performance Indicators for the Past Five Financial Years

Indicator	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023
Missed projects per year	3	6	2	4	8
Loss of income due to missed projects (in Mn.)	9.5	18	5.4	12.9	28.7
Employee Turnover Rate	4.5%	4.8%	5.4%	5.3%	12.5%

Digital Transformation During Covid-19 Pandemic at Union Assurance PLC, Kurunegala: Exploring Employee Motivational Factors

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ABSTRACT

This study's main purpose is to identify the factors affecting employee motivation during the digital workplace transformation at Union Assurance PLC, Kurunegala during COVID-19 pandemic since most of the Sri Lankan businesses implemented virtual platforms in their business processes during that period to continue their processes. This study's research philosophy is positivism, focusing on quantitative data and a deductive approach. A survey was circulated among the total population of 120 and collected 100 responses from the sample using simple random sampling, using the Likert scale of data measurement. Collected data was analyzed through SPSS software and findings showed that workplace stress, employee engagement, salary and incentives, and company culture all directly affect employee motivation. Since there was a tremendous demand for health insurance during the pandemic period, employee motivation was a crucial factor to meet the continued demand. Moreover, the company was able to build on its strengths and remain strong during the COVID-19 era's uncertain economy because of maintaining the employee motivation at an optimum level. Though this study was limited to employees of Union Assurance PLC, Kurunegala, it offers a theoretical framework for strategic decision-making related to the insurance sector during times of crisis. These results highlight how important employee motivation is for adjusting to the higher demand for health insurance following COVID-19 and improving operational effectiveness. Additionally, the research emphasizes how important it is to manage workplace stress, employee engagement, salary and incentives, and company culture; by identifying these factors, organizations such as Union Assurance PLC will be better equipped to handle the uncertainties when operating in crises situations.

Keywords **– Employee Motivation, Workplace Stress, Employee Engagement, Salary and Incentives, Company Culture.**

1. INTRODUCTION

Digital workplace transformation is a new experience for the employees in every sector of business in Sri Lanka (Thileepan & Raveendran, 2022). Union Assurance PLC is a leading insurance-providing firm in Sri Lanka that has served millions of Sri Lankans over the years (Union Assurance, n.d.). After the COVID-19 pandemic firm wanted to continue the business processes as usual despite the pandemic. So, Union Assurance PLC shifted to virtual platforms which created a digital workplace transformation within the organization. Digital workplace transformation permits employees to meet physically, and all the activities related to their job role are performed via online platforms such as video conferencing and group chat applications (Selimović et al.,2021). Union Assurance PLC, a company always promotes innovation has adapted to this transformation and has conducted its operations successfully though there is an ongoing pandemic.

Though there are virtual platforms used in rare cases, it was not used by most businesses. However, because of the COVID-19 pandemic, it became normal in Sri Lanka (Fairooz & Wickramasinghe, 2019). Because Digital Workplace Transformation is a novelty for the labor force in Sri Lanka, it affected their motivation levels of them and several factors indirectly affected employee motivation. The main purpose of this project is to identify how Workplace stress, Workplace engagement (Relationship with co-workers), Salary and Incentives, and Company Culture impact the Employee Motivation of the employees in Union Assurance, Kurunegala with the Digital Workplace Transformation.

2. LITERATURE REVIEW

This paper analyses the importance of digital transformation in current company contexts, particularly considering the COVID-19 epidemic, which has expedited the transition to digital workplaces. The use of digital technology is emphasized as an important technique for improving corporate operations, staff motivation, and overall organizational efficiency. The study delves deeper into four main aspects impacting employee motivation throughout this transformation. Namely workplace stress, engagement, remuneration and incentives, and workplace culture. Workplace stress is considered as a detriment to motivation, whereas engagement, competitive salary, and a healthy workplace culture are viewed as enhancers. The study intends to examine these elements using specific hypotheses, with the ultimate goal of understanding their influence on employee engagement throughout Union Assurance PLC's digital workplace transformation during the pandemic.

Digital transformation is now one of the most popular topics in information systems research. Existing research in this area is mostly on the digitisation of business models and its implications for the economy and society (Meske & Junglas, 2021). Remote working or digital workplace was a concept that was used limitedly by business firms. But due to the acceleration of the COVID-19 pandemic society was restricted to go out and motivated to stay in their homes. As a result, to continue the business processes in

the pandemic era, the concept of digital workplace transformation was put forward by most firms. This helped those firms to operate even in the pandemic situation despite all the challenges (Thileepan & Raveendran, 2022).

Digital workplace transformation is now an imperative must for most organizations. Due to the COVID-19 pandemic, this necessity arose rapidly. Digital technology is utilized in the digital transformation process to either construct or change critical business operations (Meske & Junglas, 2021). This strategic application of digital technology may completely revolutionize the processes of the firm, the way that the company addresses client demands, efficiency, productivity, and, most importantly, employee motivation (Meske, 2019). Employee motivation is impacted by a variety of elements, but at its core, it refers to what workers feel, encounter, and see during their employment with a company (Schwarzmüller et al., 20218). Considering all the factors that determine how an employee describes their workplace at a social instance if the company get the employee motivation right, the company will be more likely to recruit and retain top people, as well as get the most out of its staff through successful Digital Workplace Transformation (Colbert et al., 2016).

2.1 Workplace Stress

Workplace stress is described as the adverse physical and mental responses that arise when the job requirements do not meet the worker's talents, resources, or demands. Work stress has developed as a significant and focused subject in modern businesses. It

is regarded as a significant phenomenon impacting organizational health as well as the health of its individuals (Luo, 1999). Due to tight work schedules and workload resulting from remote working, workplace stress can be generated. Workplace stress results in a variety of psychological disorders such as rage, melancholy, anxiety, impatience, and tension (Saleem et al., 2015). Employees may feel discouraged and may feel not be convinced about their job roles. This creates an inefficiency within the firm, which finally results in lowering the employee motivation of the firm.

2.2 Workplace Engagement

Workplace engagement or the relationship between co-workers helps a company to work collaboratively. It guides the company's staff towards the same goal on the same path (Taris, 2023). Creating a work environment where team members are engaged is the key to unlocking an employee's full potential. It will encourage employees and increase their morale levels. Moreover, engaged employees build work relationships and believe in the broader purpose, it creates job satisfaction and encouragement to perform their job roles well which finally increases employee motivation (Chinyamurindi & Tsvangirai, 2019).

2.3 Salary and Incentives

While compensation must be competitive, the most probable driver of recruiting and retaining the top staff is incentives. Salary is monetary and incentives can be both monetary and non-monetary. Both salary and incentives encourage employees and

convince them to work efficiently and effectively (Asaari et al., 2019) To fulfil the needs and wants of the people of the society, finances are an essential factor. Since the wants of the people are complex and can be created by businesses, wants are increasing day by day. So, employees' productivity and morale can be increased by giving a considerable number of salaries and incentives (Kilnytska et al., 2020). Therefore, salary and incentives directly impact employee motivation.

2.4 Workplace Culture

Leadership, management, workplace practices, rules, people, and other factors all have a substantial effect on culture. A healthy work environment attracts talent, encourages engagement, and influences the joy and commitment of employees (McGregor & Doshi, 2015). Furthermore, a high-performing culture optimizes its people's sense of play, purpose, and potential while minimizing emotional strain, economic pressure, and lethargy. This is referred to as complete motivation. Also, an unhealthy workplace culture demotivated employees and reduces the productivity of the firm (Yusof et al., 2016).
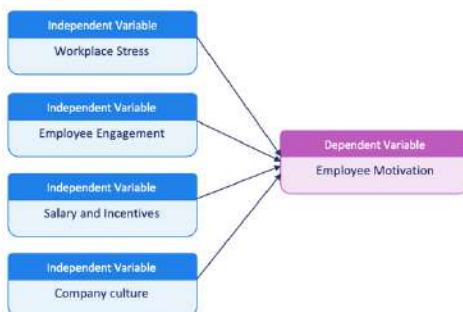
Figure 1. Conceptual Framework.

2.5 Research Hypothesis

Hypothesis 1 – Testing the relationship between Workplace stress and Employee motivation

H_a1 – There is a relationship between Workplace stress and Employee motivation

H_o1 – There is no relationship between Workplace stress and Employee motivation

Hypothesis 2 – Testing the relationship between Workplace engagement and Employee motivation

H_a2 – There is a relationship between Workplace engagement and Employee motivation

H_o2 - There is no relationship between Workplace engagement and Employee motivation

Hypothesis 3 – Testing the relationship between Salary and incentives and Employee motivation

H_a3 – There is a relationship between Salary and incentives and Employee motivation

H_o3 - There is no relationship between Salary and incentives and Employee motivation

Hypothesis 4 – Testing the relationship between Workplace culture and Employee motivation

H_a4 – There is a relationship between Workplace culture and Employee motivation

H_o4 - There is no relationship between Workplace culture and Employee motivation

The effects of Workplace stress, Workplace engagement (Relationship with co-workers), Salary and Incentives, and Company Culture are tested by the hypotheses. The influence of each aspect on the perceptions of the participants is investigated; alternative hypotheses (H_a) propose an effect while null hypotheses (H_o) imply no effect. The purpose of the study is to determine which factors have a major impact on Employee Motivation During the Digital Workplace Transformation at Union Assurance PLC, Kurunegala During COVID-19 Pandemic. Accordingly, there is a significant effect of independent variables on the dependent variable, which results in acceptance of all alternative hypotheses (Ha).

2.6 Research Questions

RQ 1 – Is there an effect of Workplace stress on Employee motivation?

RQ 2 – Is there an effect of Workplace engagement on Employee motivation?

RQ 3 – Is there an effect of Salary and incentives on Employee motivation?

RQ 4 – Is there an effect of Workplace culture on Employee motivation?

3. METHODOLOGY

3.1 Theoretical Stance, Data Collection Method, and Instruments

The research philosophy utilized in this study is positivism, which thinks that reality is constant and can be viewed and described objectively, not interfering with the events being researched. This quantitative study was conducted using a deductive approach to come to conclusions referring to the previous research since. surveys were used as the strategy to collect primary data using the Likert scale as the data measurement technique. Annual reports were used as the secondary internal data collection technique to get pre analysed and accurate data for the study. Further, a cross-sectional time horizon is used to collect data because the research should be completed within a limited time. Such that, it does not require to use longitudinal time horizon because the research was not continued for a longer period (Saunders et al., 2009). Collected data was analysed through SPSS software using descriptive and correlations data analysis techniques to come to conclusions.

3.2 Sampling Framework

In Union Assurance PLC, Kurunegala there are roughly 120 employees who are currently working in the firm. As the population, the author considered all employees for this study. According to the "Morgan Table," the ideal sampling for this population is 92. Accordingly, the author collected 100 survey responses from the employees of the company using simple random sampling, which is a probability sampling technique for this study. By that, the author was able to give a chance to employees of every level to take part in the selected sample through randomization.

Further, the researcher was able to collect data with the full consent of the research participants. They have not been subjected to any harm and their dignity and anonymity are ensured. Also, the confidentiality of the collected data and the transparency of the communication process is also ensured

which leads to ensuring research ethics during the research.

4. RESULTS AND DISCUSSIONS

4.1 Demographical Data Analysis

The gender distribution of the organization depicts that 72% of the total sampling was males, which is the majority, and the rest were females which is 28% of the total population. However, with compared to the male population the female population is considerably low. Most of the population is between 39-48 years of age range which is 37% and the lowest population lies between 18-28 years of age range which is 5%. Moreover, ranges of 29-38 years, 49-58 years and Above 58 years are 32%, 8%, and 18% respectively. Here is the company the aged population is high with compared to the young age population.

The income range of above Rs.100,000 is the majority of the population which is 27% as per the above figure. It became the majority by a change of 1% with the Rs.20,000 – Rs.40,000 range (26%). The lowest population lies between Rs.60,001 – Rs.80,000 and below Rs.20,000, which is 4%. Rs.80,001 – Rs.100,000 and Rs.20,001 – Rs,60,000 have percentages of 22% and 17% respectively. According to the distribution the company pays good compensation to all its employees.

Accordingly, the majority of employees have over 5 years of experience within the organization which is 32%. The lowest percentage which is 17% has below 1 year of experience. Further, 1 – 3 years and 3 – 5 years ranges have percentages of 31% and 20% respectively. This data depicts that

Union Assurance PLC, Kurunegala employees are more likely to be retained in the company and the employee turnover is very low. Because there is a high percentage of employees (83%) who have more than 1 year of experience within the company.

4.2 General Data Analysis

Best incentive preferred by the employees is salary advancement, which is 56%. The lowest percentage of 4% prefers other incentives rather than the given incentive types. Appreciation and recognition, a healthy working environment and promotions are preferred by 16%, 15% and 9% respectively

The majority of the employees have stated that their company culture is based on teamwork which is a decent amount of 98% of the considering sample. Only 2% said that the company culture is based on once own opinion, which is a very low percentage. Therefore, the company has a democratic and healthy company culture.

4.3 Descriptive Analysis

Figure 2. Conceptual Framework.

As per Figure 2, the feedback was distributed from 1-5 in every variable and the mean value of company culture is 4.01, it depicts that company culture affects employee motivation above the moderate/neutral level. Workplace stress, workplace engagement, and salary and incentives have mean values of 3.92, 3.98, and 3.66 respectively. That depicts these

independent variables affect employee motivation at a moderate level. So, we can conclude that every independent variable here affects employee motivation.

A symmetric distribution of Skewness lies in the range of -2.0 to 2.0, where all the variables lie within that range. So, all variables show a symmetric distribution according to the above figure 2. Here workplace stress and company culture show a high positive Kurtosis value and other variables show a positive to a negative distribution of Kurtosis value. So, this depicts an approximately normal distribution.

4.4 Reliability Analysis

Figure 3. Reliability Analysis.

Cronbach's alpha is the most often used internal consistency metric. It is most typically used in Likert scale surveys to measure reliability. Good reliability lies between 0.8 and 0.95. Here, Cronbach's alpha is 0.954, this indicates a high level of reliability in the data set. So, this can be used for further analysis as well.

4.5 Correlations Analysis

Figure 4. Correlations Analysis.

Pearson Correlation bivariate assesses the direction and strength of linear correlations between two continuous variables. Here all variables show a significant 0.000 value (p-value). Since the value is below the significant alpha value (0.001) all the independent variables highly affect the dependent variable.

The study demonstrates that all independent variables workplace stress, workplace engagement, salary and incentives, and company culture have a considerable impact on employee motivation. The descriptive analysis reveals that these characteristics influence motivation at least moderately, with business culture having the greatest impact. The reliability analysis reveals a high Cronbach's alpha of 0.954, indicating great internal consistency in the data. Furthermore, the Pearson Correlation analysis confirms the strong association between the independent factors and employee motivation, indicating that the findings are robust and reliable for further investigation and implementation.

5. LIMITATIONS

This study was limited to employees of Union Assurance PLC, Kurunegala. Which is a branch in the wider network of the Union Assurance PLC. Further the population is also very low with compared to the number in the Insurance sector. Although the study has above limitations, through reliable data collection and finding the correct target audience through the sampling technique offers a theoretical framework to generalise the findings of the research.

Also, this study has been conducted using a reputed company and with an educated and

proper sample this study result can be applied to any circumstance which leads for strategic decision-making related to the insurance sector during times of crisis.

6. CONCLUSION

Remote workplace or the "Digital Workplace Transformation" has affected the motivation of employees who are employed in Union Assurance PLC, Kurunegala. Since working online is the only option, employees had to adapt to this novelty.

According to the demographics data, employees are getting a good amount of salary and employees are more likely to be retained in the company. Also, they are getting both monetary and non-monetary incentives like salary advancements, promotions, appreciation & recognition, and a healthy working environment as motivators. The company culture is also based on teamwork which again motivates them to work and there is a low employee turnover. So, here the company was able to motivate its employees successfully.

According to the analytical data obtained through SPSS software, the research findings are reliable and all the independent variables namely workplace stress, workplace engagement, salary and incentives and company culture have affected employee motivation of employees through the process of digital workplace transformation.

Further, according to the latest annual reports the company has obtained a 48% growth in profit from operations though there was COVID-19 (Union Assurance PLC, 2021). Such that, employees of the company have adapted to Digital Workplace Transformation successfully and have worked with great motivation to bring success to the organization. Also, the company has motivated employees to adapt to remote working by identifying the factors affecting employee motivation and was able to encourage them to work with great motivation.

7. RECOMMENDATIONS

Gender distribution is not that good in the organization. So, the company should increase the female population by at least up to 35% by recruiting more females in the recruiting process (Elliott & Smith, 2004). Also, the company should increase the young age population and it will help the company to increase productivity as well. The company should maintain its excellent compensation policy, work environment, and company culture as it is. If the company wants to motivate employees, it can use Salary advancement mostly. Because of the majority like salary advancements as an incentive. Moreover, the company should maintain its low employee turnover to retain talented employees.

Furthermore, to keep the motivation levels of the employees high the Union Assurance can make use of the Independent Variables as follows by considering the results from the SPSS analysis, workplace stress is a very crucial factor to consider. High workplace stress can cause low employee motivation. So, the company must aid its employees in managing their workplace stress by assigning an appropriate amount of work and giving them manageable working hours (Teasdale, 2006). Workplace engagement is

highly significant according to the analysis of the coefficients. So, the company should offer its employees a chance to engage with their co-workers and should maintain an enjoyable workplace for its employees (Kohntopp & McCann, 2020). Salary and incentives are also significant according to the analysis of the coefficients. Therefore, the company should give its employees an adequate salary for their effect and should give incentives to appreciate their extra effort (Tampu & Cochina, 2015). Healthy Company culture should also be maintained by respecting and considering the ideas of employees and by making them feel valued. Also, the company should provide learning and development opportunities to its employees as well (Roos & Van Eeden, 2008).

Union Assurance PLC, Kurunegala's excellent adaption to Digital Workplace Transformation demonstrates the company's capacity to overcome significant hurdles while keeping employees motivated amid the COVID-19 pandemic. By identifying and addressing important elements influencing employee motivation, such as workplace stress, engagement, salary and incentives, and company culture, the organisation was able to create an atmosphere in which employees felt valued and supported despite the change to remote work. This strategic approach not only reduced the potential negative effects of workplace stress, but also increased the advantages of a strong, unified work culture and competitive remuneration.

The company's astounding 48% increase in operating profit during a period when many firms fought to stay afloat demonstrates the strong link between these elements and employee enthusiasm. Furthermore, low staff turnover and excellent retention rates show that Union Assurance PLC's efforts to build a friendly and engaging digital workplace were effective. Employees not only adapted to the new working circumstances, but also flourished, contributing considerably to the company's growth. Finally, the instance of Union Assurance PLC demonstrates how a well-executed Digital Workplace Transformation may result in increased employee motivation and, eventually, organisational success.

By putting its employees' interests and well-being first, the firm not only weathered the epidemic but emerged stronger, setting a standard for the industry. Further the company has maintained its success and the reputation that has gained through the hard work of many people in the past years if the company have motivated employees. Because in any company employees are the key factor that drives the company toward its end goal.

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8. ACKNOWLEDGEMENT

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Barriers to Adopting and Implementing Green Practices: A Study of Small and Medium-Sized Enterprises (SMEs) in Sri Lanka

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ABSTRACT

In the contemporary business environment, stakeholders have become increasingly concerned about sustainable development and how businesses contribute to environmental issues. In this context, many recent studies have identified that small and medium-sized enterprises (SMEs) play an important role in sustainable development, but SMEs often face barriers in implementing green practices. However, most of the literature on this topic pertains to developed countries, and there is limited empirical evidence from the South Asian context, especially Sri Lanka. Hence, this research aimed to identify the key barriers that prevent SMEs in Sri Lanka from implementing green practices. A quantitative research approach was used and data was collected from 114 SMEs in Sri Lanka, which was analysed using IBM SPSS Statistics. The study found that financial constraints were the most significant barrier to the adoption and implementation of green practices among SMEs in Sri Lanka, followed by poor environmental knowledge and awareness among the decision-makers of SMEs, weak enforcement of environmental laws and lack of access to technology. Recommendations such as initiating green financing schemes for SMEs, conducting programs to increase environmental knowledge among SME decision-makers, and enforcing strict environment laws were made to SMEs, policymakers, and relevant stakeholders to develop effective strategies to help SMEs overcome the identified barriers and encourage the adoption of green practices among SMEs.*

Keywords** – **Sustainability, Sustainable Development, Green Practices, SMEs, Developing Countries

1. INTRODUCTION

In recent years, the impel for businesses to adopt green practices has grown considerably, mainly due to the rising global environmental issues and increasing

awareness of corporate social responsibility (Thomas et al., 2022; Iliopoulou et al., 2024). SMEs play a key role in sustainable development given their significant economic contributions, especially in developing countries. For instance, SMEs comprise about 90% of all businesses, employing over 50% of the workforce (World Bank, 2019). Furthermore, in developing countries, SMEs contribute to over 50% of the GDP and are crucial to the nation's economic stability and growth (Central Bank of Sri Lanka, 2022). However, despite their economic significance, the green performance of SMEs is considerably behind that of larger businesses (Silva et al., 2021).

Studies have shown that the adoption of green practices in SMEs remains at a relatively primary stage (Maniu et al., 2021; Ernst et al., 2022; Kusumawardani et al., 2024). This is because SMEs often face various formidable barriers when trying to put green practices into action (Caldera et al., 2019; Alayón et al., 2022; Durrani et al., 2024). For instance, the financial capabilities of SMEs to invest in green practices are more limited than those of larger corporations, which often limits their ability to invest in green technologies and practices (Cecere et al., 2020).

While recent studies (Karuppiah et al., 2020; Alayón et al., 2022; Madrid-Guijarro & Duréndez, 2023; Shahin et al., 2024) have extensively studied these barriers, there is a lack of empirical data focusing on SMEs in South Asia, particularly in the context of Sri Lanka. Therefore, this research aims to fill this gap by investigating the barriers faced by SMEs in Sri Lanka in adopting green practices.

Understanding the specific barriers that SMEs face in the South Asian region is critical as it will allow for developing targeted strategies to overcome the barriers that SMEs in the region face in implementing green practices while contributing to the existing literature on the topic. Furthermore, the contemporary business environment of Sri Lanka presents an excellent context for this study. The SMEs in Sri Lanka have been severely affected by many back-to-back events, including the Easter bomb attack in 2019, the COVID-19 pandemic, and the economic crisis in 2022 (Department of Census and Statistics, 2023). Following all these crises, Sri Lanka's economy is recovering (World Bank, 2024), and the SME sector is on the rise. Therefore, this context offers the opportunity to examine how SMEs are affected in terms of green performance and what barriers they have encountered.

Overall, this study will identify the significant barriers that Sri Lankan SMEs face in implementing green practices, which will facilitate relevant stakeholders and policymakers in developing potential solutions to promote sustainable business practices in Sri Lanka and in the South Asian region.

2. LITERATURE REVIEW

2.1 Small and Medium Enterprises (SMEs)

Small and Medium Enterprises (SMEs) are a particularly important part of economies worldwide and play a vital role in economic

growth, innovation, and employment (Wiklund et al., 2019; Manzoor et al., 2021). Given this significant role of SMEs in economic growth, SMEs are identified as a critical component of sustainable development and have an enormous potential to make substantial contributions to environmental sustainability (Permatasari & Gunawan, 2023; Yadegaridehkordi et al., 2023).

However, the integration of green practices in SMEs is relatively low, especially in developing countries. For instance, in a study of ASEAN countries, Yoshino et al. (2023) showed that SMEs significantly contribute to CO_2 emissions as their green activities are inadequate and do not align with the environmental protection goals. Numerous studies have explored this issue and have established that external support can drive the adoption of green practices in SMEs (Baranova & Paterson, 2017; Achmad et al., 2023; Durrani et al., 2024).

2.2 Green Practices Implemented in SMEs

Green practices can be defined as "actions that reduce the impact on the environment" (Wolfe & Shanklin, 2001, p. 209). Dang-Van et al. (2023) defined green practices as initiatives implemented by businesses to ensure environmental protection. Given the increased awareness of environmental protection, green practices have become paramount for business operations as they increase the bottom line, provide a competitive advantage through building a better brand image, enhance customer satisfaction, and can be used as a marketing strategy (Zhang et al., 2011; Merli et al., 2019; Maziriri & Liu, 2020).

The adoption of green practices in SMEs is influenced by a range of factors. Purwandani and Michaud (2021) found internal motivations and better public image to be the main drivers for implementing green practices in SMEs. On a similar note, Ghazilla et al. (2015) also reported that the intentions of owners are the key driver of green practices in SMEs. On the other hand, Ghadge et al. (2017) found that both internal and external factors can influence the adoption of green practices in SMEs. However, internal factors were found to be more influential than external factors.

The common green practices implemented by SMES are use of green energy sources (Abdou et al., 2020; Barakagira & Alex, 2023), water conservation and recycling (Wang et al., 2018; Abdou et al., 2020; Luo & Fan, 2021), waste reduction, segregation, and recycling (Wan et al., 2017; Rodríguez-Antón & Alonso-Almeida, 2019; Maniu et al., 2021), use of energy-efficient equipment and policies (Rodríguez-Antón & Alonso-Almeida, 2019); and sustainable sourcing (Luo & Fan, 2021; Maniu et al., 2021).

2.3 Barriers to Green Practices in SMEs

2.3.1 Financial Barriers

Much of the literature on developing countries has highlighted financial barriers as one of the most common barriers for SMEs in implementing green practices (Gupta & Barua, 2018; Derevianko, 2019; Khattak, 2020). Compared to large enterprises, SMEs typically operate with limited capital, which significantly

influences SMEs to prioritise investing in activities that improve their business performance and competition over green practices (del Río et al., 2010; Uhlaner et al., 2012; Burlea, 2013). This view is supported by Cecere et al. (2020), who argued that capital constraints disproportionately affect SMEs, hindering their ability to adopt environmentally friendly technologies and eco-innovation.

H1: There is a significant impact of financial barriers on SMEs' adoption of green practices.

2.3.2 Information Barriers

Lack of environmental knowledge and awareness among managers, employees, suppliers, and stakeholders can hinder SMEs' implementation of green practices (Luo et al., 2021). Environmental knowledge and awareness in managers are crucial to implementing green practices in a hotel as they make strategic choices and regard environmental issues either as threats or opportunities (López-Gamero et al., 2011). Supporting this view, a study of Polish hoteliers revealed that poor awareness of green practices has hindered the implementation of green practices (Bohdanowicz, 2006). Similarly, the lack of environmental knowledge and awareness among employees can also hinder the implementation of green practices in SMEs. For instance, Kumar et al. (2022) found that lack of employee knowledge was the most significant barrier to adopting green practices in all the three Indian SMEs studied in their research. On the other hand, Wang et al. (2018) revealed that large hotels are better at implementing green practices than small hotels, attributing to stronger environmental awareness of large hotels.

H2: There is a significant impact of information barriers on SMEs' adoption of green practices.

2.3.3 Political and Legislative Barriers

The literature has established that the political and regulatory environment can both support and hinder the implementation of green practices in SMEs. For instance, weak enforcement of environmental laws and the absence of governmental incentive policies were identified as key barriers which hindered Chinese SMEs from adopting green manufacturing practices (Shi et al., 2008). Similarly, Fahad et al. (2022) found that legal barriers were the most critical barrier for Pakistani SMEs to implement green practices, and low governmental support was the top-ranked sub-barrier among legal barriers.

Additionally, Graci (2009) found that due to the non-regulatory situation of environmental laws in Sanya, hotels are not prioritising green practices. On the other hand, a well-developed, strictly enforced, and supportive regulatory framework can drive the implementation of green practices (Hoogendoorn et al., 2015), while helping SMEs to overcome both external and internal barriers (Jabbour et al., 2016).

H3: There is a significant impact of political and legislative barriers on SMEs' adoption of green practices.

2.3.4 Technology Barriers

Lack of access to green technology is another challenge SMEs face in

implementing green practices (Dornfeld, 2012; Chanchala & Joseph, 2023). In many cases, SMEs lack access to the latest eco-friendly technologies and infrastructure as they are expensive or not readily available, especially in developing countries like Sri Lanka (Prasanna et al., 2020; Fahad et al., 2022; Madrid-Guijarro & Duréndez, 2023). For instance, a study in Pakistan revealed that lack of infrastructure and technology was a significant impediment to the successful implementation of reverse logistics (Waqas et al., 2018). The study highlighted the fact that, since Pakistan is a developing country, the lack of modern technology and proper infrastructure makes the successful execution of reverse logistics difficult. Supporting this view, Musavengane (2019) found that lack of access to waste recycling infrastructure and technology is a major barrier for hotels to dispose of their solid waste in a sustainable manner. Along the same lines, Purwandani and Michaud (2021) found that SMEs in urban areas are more engaged in green business practices, which could be attributed to the fact that SMEs in urban areas have better access to technologies and infrastructure (Desilver, 2016).

H4: There is a significant impact of technology barriers on SMEs' adoption of green practices.

2.4 Conceptual Framework
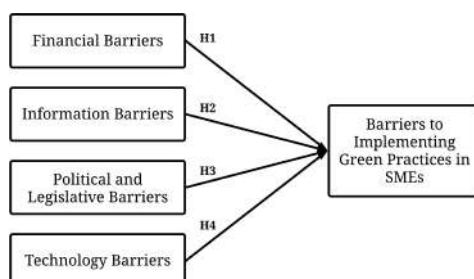
Figure 1. Conceptual Framework

3. METHODOLOGY

The study employed a quantitative research approach to investigate the barriers to adopting green practices among SMEs in Sri Lanka. A quantitative approach was selected as it allowed for statistical analysis and generalisation of findings across a larger sample of SMEs.

3.1 Sampling

The study targeted SMEs from various industries in Sri Lanka. The study employed a combination of convenience and snowball sampling. During the initial stage, the study used the convenience sampling technique to reach accessible SMEs, while the snowball sampling technique allowed for reaching additional respondents through referrals from the initial participants. Overall, this allowed for maximising the diversity of the sample to enhance the generalisability of the findings and collect the data in a short period of time.

3.2 Data Collection

A structured questionnaire with demographic and Likert scale questions was developed. The demographic questions gathered basic information about the SME such as the industry, number of employees, turnover, and years in operations. The Likert scale questions were based on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) which was developed based on the insights from the literature.

The questionnaire was distributed, and data was collected through Google Forms.

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3.3 Data Analysis

Statistical Packages for Social Sciences (SPSS) was used to analyse the data. Descriptive analysis, reliability analysis, correlation analysis, and regression analysis were conducted.

4. DATA ANALYSIS

4.1 Demographic Data

4.1.1 Gender of the Business Owner/s

Table 1. Gender of Business Owner/s

Female	46	40.4%
Male	45	39.5%
Both	23	20.2%

The gender distribution of the respondents was balanced. Of the 114 respondents, 40.4% were female, 39.5% were male, and 20.2% of the businesses were co-owned by both male and female partners.

4.1.2 Highest Level of Education of the Business Owner/s

Table 2. Highest Level of Education of the Business Owner/s

No ordinary education	1	0.9%
Up to Ordinary level	4	3.5%
Up to Advanced level	37	32.5%
Professional diploma	24	21.1%
University level education	45	39.5%
Postgraduate	3	2.6%

The highest education level of the respondents varied widely. Around 40% of the respondents had a university-level education, while 2.6% had completed their postgraduate studies. Approximately, a third of the respondents have had education up to the advanced level, while 21.1% held professional diplomas. Notably, only a small fraction of the respondents (4.4%) had a low level of education.

4.1.3 Capital of the Business

Table 3. Capital of the Business

Less than 50,000 Rs.	21	18.4%
50,000- 200,000 Rs.	24	21.1%
200,000- 500,000 Rs.	33	28.9%
500,000- 1,000,000 Rs.	19	16.7%
More than 1,000,000 Rs.	17	14.9%

The capital employed in the SMEs ranged from less than Rs. 50,000 up to Rs. 1,000,000 and more. Half of the respondents had a capital between Rs. 50,000 to Rs. 500,000. On the higher end, 16.7% and 14.9% of the SMEs had a capital of Rs. 500,000 – Rs. 1,000,000 and more than Rs. 1,000,000 respectively, whereas 18.4% of the SMEs had a capital less than Rs. 50,000.

4.1.4 Duration of Operations

Table 4. Duration of Operations

Less than 1 year	13	11.4%
1 – 5 years	51	44.7%
6 – 10 years	28	24.6%

11 – 15 years	13	11.4%
More than 15 years	9	7.9%

Nearly half of the SMEs (44.7%) had been in operation for 1 to 5 years, while 24.6% of the SMEs had been in operation for 6 to 10 years. Only 7.9% of the SMEs had been operating for over 15 years.

4.1.5 Nature of the Industry

Table 5. Nature of the Industry

Wholesale and retail services	44	38.6%
Professional services	29	25.4%
Manufacturing	27	23.7%
Agriculture	10	8.8%
Other	4	3.5%

The respondent SMEs were from diverse industries, which ensured the sample represented the broader population of SMEs in Sri Lanka. The highest number of respondents (38.6%) were related to wholesale and retail services, whereas 25.4% of SMEs were professional services. Additionally, 23.7% and 8.8% of the SMEs were engaged in manufacturing and agriculture, respectively.

4.2 Reliability Analysis

When utilising data obtained from Likert scale questions, it is important to assess the internal consistency to ensure the accuracy and dependability of the data collected. The study used Cronbach's alpha to test the reliability of the collected data.

According to Zeller (2005), Cronbach's alpha values of 0.9 or higher are considered excellent, values between 0.8 to 0.9 are deemed adequate, 0.7 to 0.8 are marginal, and values below 0.7 are considered insufficient. The reliability analysis (see Table 1) indicated that the Cronbach's alpha value of all the variables exceeded 0.7, therefore reliable.

Table 6. Reliability Statistics

Variable	Cronbach's Alpha
Financial Barriers	0.903
Information Barriers	0.785
Political and Legal Barriers	0.832
Access to Technology	0.808
Barriers for Implementing Green Practices	0.814

4.3 Correlation Analysis

Correlation analysis is used to identify the nature of the relationships between variables and the strength of the relationship. Pearson correlation analysis was used to analyse the relationship between the identified barriers to adopting green practices in SMEs. Pearson correlation is a statistical measure which assesses the strength and direction of the linear relationship between two quantitative variables. Pearson's r value ranges from -1 to +1, where +1 indicates a perfect positive linear relationship, while -1 indicates a perfect negative linear relationship, and 0 indicates little or no relationship between the two variables (Warner, 2020).

The results, as shown in Table 2, indicate that all independent variables have a positive correlation with the dependent variable. Furthermore, all the correlations are statistically significant (sig <0.05).

Financial barriers had the strongest positive relationship with barriers for implementing green practices (r= 0.722), followed by political and legal barriers (r= 0.648). Information barriers had a moderate positive relationship (r= 0.628), while the correlation of lack of access to technology with barriers for implementing green practices was comparatively weaker (r= 0.386), but still had a significant positive relationship.

Table 7. Correlation Analysis

		Barriers for Implementing Green Practices
Financial Barriers	Pearson Correlation	.722**
	Sig. (2-tailed)	.000
Information Barriers	Pearson Correlation	.628**
	Sig. (2-tailed)	.000
Political and Legal Barriers	Pearson Correlation	.648**
	Sig. (2-tailed)	.000
Access to Technology	Pearson Correlation	.386**
	Sig. (2-tailed)	.000

**. Correlation is significant at the 0.01 level (2-tailed).

4.4 ANOVA Test

To evaluate the overall fit of the regression model used in this study, the ANOVA test was conducted. A one-way ANOVA compares whether there are statistically significant differences in the means across two or more groups for a single dependent variable. One-way ANOVA is necessary when there is more than one independent variable and one dependent variable, as a t-test cannot be used in these instances (Ross & Wilson, 2017).

The R-value of .779 indicates a strong positive relationship between the independent variables and the dependent variable. Furthermore, the R Square value of .607 indicates that 60.7% of the variance in barriers to implementing green practices is explained by the model. The F-statistic of the model is 42.121 and the significance level is 0.000. Overall, the ANOVA test indicates that the model is statistically significant.

Table 8. Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.779	.607	.593	.38754

Table 9. ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	25.304	4	6.326	42.121	.000
Residual	16.370	109	.150		
Total	41.674	113			

4.5 Regression Analysis

Multiple linear regression analysis is a statistical method which allows for examining the relationship between one dependent variable and multiple independent variables. Regression analysis was conducted to test the hypotheses (see Table 5).

H1: There is a significant impact of financial barriers on SMEs' adoption of green practices.

The results ($\beta = 0.352$, $p < 0.05$) indicate a significant positive impact of financial barriers on the adoption of green practices in SMEs. Therefore, H1 is accepted.

H2: There is a significant impact of information barriers on SMEs' adoption of green practices.

The results ($\beta = 0.200$, $p < 0.05$) indicate a significant positive impact of information barriers on SMEs' adoption of green practices. Therefore, H2 is accepted.

H3: There is a significant impact of political and legislative barriers on SMEs' adoption of green practices.

The results ($\beta = 0.190$, $p < 0.05$) indicate a significant positive impact of political and legislative barriers on SMEs' adoption of green practices. Therefore, H3 is accepted.

H4: There is a significant impact of technology barriers on SMEs' adoption of green practices.

The results ($\beta = 0.165$, $p < 0.05$) indicate a significant positive impact of lack of access to technology on SMEs' adoption of green practices. Therefore, H4 is accepted.

Overall, the results indicate that, at a 95% confidence level, all four variables- financial barriers, information barriers, political and legislative barriers, and lack of access to technology had a significant positive impact on SMEs' adoption of green practices. Furthermore, of all four of these variables, financial barriers had the highest beta coefficient of 0.352, which suggests that financial barriers are the most influential factor among the predictors. This is followed by information barriers and political and legislative barriers which had closer beta coefficients, 0.200 and 0.190, respectively. Lack of access to technology was the least influential factor among the four predictors with a beta coefficient of 0.165.

Based on the regression analysis, the regression equation can be developed as follows:

Barriers to Implementing Green Practices in SMEs= 0.388+ 0.352 (Financial Barriers) +0.200 (Information Barriers) +0.190 (Political and Legal Barriers) +0.165 (Lack of Access to Technology).

Table 10. Regression Analysis Results

Variable	Beta Coefficient	t	Sig.
Financial Barriers	.352	4.870	.000
Information Barriers	.200	2.259	.026
Political and Legal Barriers	.190	2.023	.046
Access to Technology	.165	2.379	.019

5. DISCUSSION

The aim of this study was to examine the barriers faced by SMEs in Sri Lanka when implementing green practices. A quantitative methodology was employed to identify the significant barriers that pertain to the Sri Lankan context.

The regression analysis revealed that financial barriers are the most significant barrier faced by Sri Lankan SMEs in adopting and implementing green practices. This finding aligns with previous studies, which have identified financial barriers as a primary obstacle for SMEs in implementing green practices (Gupta & Barua, 2018; Purwandani & Michaud, 2021; Madrid-Guijarro & Duréndez, 2023). Moreover, these results agree with the findings of Abdullah et al. (2023) and Durrani et al. (2024) which showed that financial constraints are a key barrier for SMEs in developing countries. It can therefore be confirmed that financial constraints hinder the ability of SMEs to invest in green initiatives. Given the worsened contemporary economic landscape in Sri Lanka post COVID-19, the Easter bombing attack and the economic crisis, these financial constraints are likely to be exacerbated. This is a particularly important finding, as it brings forward the critical need for creating more accessible financing options and incentives for SMEs in implementing green practices. As highlighted by Gupta and Barua (2018), financial incentives can motivate and drive SMEs towards adopting green practices.

Information barriers emerged as another significant barrier that SMEs face in implementing green practices. This finding reflects that the lack of knowledge and awareness about green practices among SME owners, managers, and employees is a considerable barrier to sustainability initiatives. Many studies (e.g. Luo et al., 2021, Alayón et al., 2022, Kumar et al., 2022) have shown that information barriers often result in poor environmental performance in SMEs. Therefore, greater efforts need to be made to initiate educational and training programs aimed at improving the knowledge and skills of SME stakeholders in green practices. Moreover, it is required to enhance environmental knowledge among the people in general, as environmental awareness remains low in developing countries and regions (Nahar et al., 2023), and environmental knowledge and awareness can drive towards better environmental behaviour (Mohiuddin, 2018).

Similarly, political and legal barriers are another significant barrier for SMEs in implementing green practices. The results indicate that weak environmental laws, lack of government support, and inadequate environmental policies have contributed to the poor environmental performance of SMEs. These results corroborate the findings of previous studies. For instance, the findings of Tyler et al. (2023) showed that a weak regulatory environment inhibits the proactive adoption of environmental practices. On the other hand, supportive government policies, incentives, and advocacy can influence SMEs to adopt green practices (Lutfi et al., 2023; Durrani et al., 2024). The regulatory environment in Sri Lanka, as in many developing countries, is weak when it comes to environmental protection. Weak enforcement of

environmental laws, legal loopholes, corruption, and numerous other factors have reduced the coercive power inserted by the laws and regulations on SMEs, leading to a lack of compliance among them in implementing green practices. Therefore, it is crucial that the government formulate and enact more strict environmental laws and regulations. Additionally, supportive government policies such as incentives, tax breaks, and subsidies should be introduced to encourage SMEs to adopt green practices.

The results showed that technological barriers significantly impact the adoption of green practices in SMEs. However, the impact of technological barriers was somewhat lower compared to the other factors. An explanation for this might be that, while technology plays a role in driving green practices, it is not the most pressing challenge that SMEs in Sri Lanka face. This finding reflects those of other studies in developing countries (Ullah et al., 2021; Fahad et al., 2022), where technological challenges are often highlighted as key barriers but not always the primary barrier. However, limited access to modern green technologies, infrastructure, equipment etc. can restrict SMEs from achieving operational efficiencies and environmental benefits. As noted by AlZayani et al. (2023), new technologies can improve the environmental performance of SMEs. There is, therefore, a definite need for enhancing the accessibility of new technologies for SMEs. Continued efforts are needed to make investments in developing infrastructure such as waste recycling, clean energy, and other environmentally friendly technologies.

6. CONCLUSION

This study was aimed to examine the barriers that hinder the adoption of green practices among SMEs in Sri Lanka. The findings revealed that financial barriers are the most significant barrier that Sri Lankan SMEs face in implementing green practices. Furthermore, information, political and legislative, and technological barriers were also identified as significant barriers that the studied SMEs faced.

The findings of this study provide insights into the specific barriers that Sri Lankan SMEs face which can be used for developing and implementing strategies to enhance the environmental performance of SMEs. The findings highlight the need for financial support for SMEs in investing in green practices, strict enforcement of environmental laws, increasing environmental awareness, and implementing supportive policies such as tax subsidies and green loans. Furthermore, the findings of this study empirically contribute to the growing body of sustainability research in developing countries. Furthermore, the study contributed to the understanding of the varying degrees of impact that these barriers have on green practice adoption which accords with the findings of similar studies conducted in other contexts.

The main limitation of this study is that it was restricted to SMEs in Sri Lanka. Therefore, the findings may not be fully generalisable to SMEs in other developing countries. What is now needed is a cross-national study involving SMEs from multiple countries, which will allow for a comparative analysis and deepen the understanding of how contextual factors

influence the adoption of green practices in SMEs. Furthermore, utilising a qualitative or mixed-method approach could shed more light on these barriers. Notwithstanding these limitations, the study provided valuable insights into the barriers to adopting green practices by SMEs in Sri Lanka which have several important implications for future practice. By implementing the recommendations derived, it will create a more conducive environment for SMEs to adopt green practices. Through these continued efforts, Sri Lanka will be able to accelerate its environmental performance along with economic growth, ensuring a more sustainable future for everyone.

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How have Environmental, Social, and Governance (ESG) Disclosures Influenced Sustainable Growth in the Banking Sector of Sri Lanka?

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ABSTRACT

Banks, which are important financial cornerstones in an economy, provide the sector with an assurance of sustainable development. Environmental, Social, and Governance (ESG) disclosures have advanced across the past three years in Sri Lanka and are now widely used to assess the banking sector's sustainable growth. The institutions are pressing for green ESG practices to be followed within the regulatory framework.Meanwhile, increasing literature shows that Green Banking ESG disclosure also has a substantial influence on sustainable development in the banking industry. Compliance with Green Banking ESG disclosure is a prerequisite in the banking sector in Sri Lanka. Although the demand for this Green Banking ESG disclosure raises regulatory issues, the banking industry has not yet fully adopted to this requirement. Banks are still not incorporating the idea into their business plans for the banking sector's sustainable expansion. Thus this is an essential paradigm, the research reviewed the factors by a thematic analysis that are influencing the Green Banking ESG disclosure for the sustainable development in the banking industry in Sri Lanka. The main findings of the research support the factors that are influencing green banking disclosure and the findings align with the recent research with also strengthen the theoretical domain. The study indicates how the banking industry to be highly sustainable by complying with these ESG disclosures. The banking sector can achieve operational excellence by implementing these findings into their business strategies.

***Keywords* - Green banking, ESG disclosure, sustainable development, Sri Lanka**

1. INTRODUCTION

Banks are the financial intermediaries that provide the financial resources needed for economic growth. Therefore, banks may

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operate effectively by placing sustainable plans into place as they are the main forces in an economy that can achieve sustainable growth. An environmentally friendly practice engaged in the banking business is known as "green banking," "ethical banking," "social banking," or "sustainable banking" (Hasan et al., 2022). Bank stability is a fundamental requirement for an economy's financial systems to operate effectively and efficiently (Mozib Lalon, 2015).A Roadmap for Sustainable Finance in Sri Lanka with a group of stakeholders was introduced by the Central Bank of Sri Lanka (CBSL) initially in 2019 with a way forward to a Green Finance Taxonomy (Sri Lanka Green Finance Taxonomy, 2022). This regulation compelled financial institutions to follow ESG guidelines.

As a viable model for company management, Environmental, Social, and Governance (ESG) issues have now been adopted by the banking industry. Because shareholders and stakeholder pressure is more focused on wealth maximization. Sustainable growth might be possible if banks focus more heavily on investing methods that include ESG disclosures (La Torre, Leo & Panetta, 2021). At present banks are more responsible for the environment and society. Due to growing interest in investing in businesses, Environmental, Social, and Governance (ESG) analysis has emerged as a crucial component of the investment process (Alsayegh et al., 2020). A bank can reduce the risk of environmental violations and the financial and reputational consequences by implementing green banking practices (Acar et al.,2021). National and local government are also in favor of green practices, which

may result in increased revenue. The transformation to these ESG disclosures was also implemented at the international level in 2006 by the United Nations Environment Programme Financial Initiative (UNEP FI), The United Nations Global Compact, and the United Nations Principles for Responsible Investment (UN-PRI) (Alsayegh et al., 2020).

ESG concerns can also have significant effects on a bank's risk profile, liquidity, and financial performance (Gutiérrez-Ponce & Wibowo, 2023).

Financial institutions are now having difficulty keeping their clients, so companies that can stand out and promote the integration of ESG issues into their business plan will have a competitive advantage which will enhance their reputation (Gutiérrez-Ponce & Wibowo, 2023).

Therefore, banks should rethink their corporate strategies, focusing on economic aims while paying special attention to corporate, social, and environmental performance. The banking industry should conduct its operations while taking ethical, social, and environmental factors into account. Although this idea is common in Western nations, it is currently a needy idea in Asian regions like Sri Lanka. Furthermore, looking at the significance of these disclosures, stakeholder engagement should also be improved (Cosma et al., 2021). Financial institutions must make sure that the products or services they deliver to the economy are secure and accountable for the product outcomes (Dong & McIver, 2021).

ESG integration into strategic business operations is now essential when assessing a company's performance (Sharma & Choubey, 2022). In examining the relationship between environmental engagement and financial performance, the financial benefits of financing environmentally friendly practices, the resource usage within the organization, and the reduction of reputational risk should all be considered (Liu & Wu, 2023). ESG is also a crucial tool for communicating with stakeholders because it validates and encourages socially responsible behaviour. Banks' firm-specific risks are directly impacted by their reputation and stakeholders' confidence (Mozib Lalon, 2015).

The term "sustainability" has multiple meanings. It is a theory combined with society, economy, and environment which emphasizes sustainable development (Clément et al.,2022). ESG scores, also known as sustainability scores, are frequently used in the financial industry to demonstrate an organization's sustainability. ESG scores are a step in the right direction in terms of enabling financial investments to align with the UN's Sustainable Development Goals (SDGs). Their fundamental aim is to provide objective assessments of a company's corporate social responsibility performance; instead, they identify the financial risk associated with ESG issues (Clément et al., 2022).

This research aims to find out the factors influencing green banking Environmental, Social, and Corporate Governance (ESG) disclosure for sustainable growth in the banking industry in Western Province, Sri Lanka. The study objectives are to examine the importance of the green banking concept for the banking industry, to identify insights on ESG disclosure and its impact on the sustainability in banking industry, to identify the factors that are influenced by green banking ESG disclosure for sustainability and to provide strategies to implement ESG disclosures as an organizational excellence.

This section elaborates the introduction to the research study consisting of green banking, ESG disclosure, and the impact of ESG disclosure on sustainable development in the banking industry. The problem statement, the research question and the objectives of the study are also clearly defined in this section.

2. LITERATURE REVIEW

This section elaborates on the theoretical foundations of the concepts related to the current study. The study intends to fill a significant research gap for the sustainability of the banking industry by analyzing the elements that affect ESG disclosure for the banking sector that have received less attention to date. In many aspects, this study supports the existing literature.

2.1 Green Banking concept in the banking industry

Green is gradually emerging as a result of global eco-consciousness (Saigal & Sathya, 2020). The concept of "green banking" addressed concerns related to the environment, the economy, and sustainable development. Green banking supports to strengthen ethical banking practices while reducing the negative effects of ecologically friendly actions (Zhang et al., 2022). Banks

stayed focused on their strategic goals by integrating ESG into their operations. (Helfaya et al., 2023; Kumar & Prakash, 2020)

The disregard for environmental guidelines will have a severe impact on financial performance, and banks may also lose their social standing. Apart from that Green Bank is a bank that uses green technologies to reduce its carbon footprint and support environmental management (Liu & Wu, 2023). Liu & Wu, 2023 also argue that even knowing the pertinent information is unreliable, and employee awareness of this green banking idea is poor. Technology advancement which enhances market competitiveness is also a strategy for the idea of turning green (Zhou et al.,2022).

There is also a significant gap in how people perceive green banking and how they are aware of this concept. Green finance can be viewed as an organizational strategy, by the concept of legitimacy theory, since it also aids in environmental development by lowering energy consumption, carbon emissions, and other adverse impacts. The sustainability of the environment as a whole is improved through green efforts like paperless banking and internet banking. Banks also set the standard for corporate sustainability by investing in green projects (Dai et al.,2022). Due to the severe effects of environmental issues green finance is a major force behind banks' sustainable development (Digar, 2023).

Beyond just a financial concept, green banking is a revolutionary strategy aimed at addressing today's most pressing environmental and social concerns. To address the urgent need for an equitable

future through sustainable practices, the banking industry has undergone a profound transformation known as "green banking."

2.2 Environmental, Social, and Governance Disclosure

Environmental, Social, and Governance (ESG) disclosure has enlarged relevance in recent years as businesses and investors recognize the value of considering non-financial factors on decision making.

Pulino et al., 2022, convey that the disclosure of ESG factors is interconnected. A bank can take several precautions to maintain a sustained competitive edge, including the innovation of products and the implementation of strategies. In line with Manta et al., 2020, expresses that banks are zero-emission institutions; therefore, environmental disclosures may have a secondary effect on the performance of the bank. It has been argued that ESG should be approached from different theoretical perspectives rather than just one (Izcan & Bektas, 2022).

2.3 Theoretical underpinnings pertaining to ESG disclosures

According to the stakeholder theory, a company's involvement in ESG will give it a competitive edge for stakeholders. The stakeholder theory states that banks can use a single strategy to build close ties with their stakeholders and deliver more beneficial reports, such as sustainability reports (Aulia et al., 2023). Contrary to the neoclassical theory, ESG involvement will be expensive, harmful to corporate performance, and destructive to competitive advantage; as a

result, there will be a negative impact between ESG and bank performance.

Samuel et al., 2023, argues though environmental disclosures improve financial performance, the corporation may incur costs as a result. Also states that the concept of going green will not make a profit for the institute. Environmental obligations of a bank could be identified as the use of internal resources effectively, funding in sustainable projects and risk assessment of unethical projects (Yuen et al., 2022). The sustainable performance of a bank can be measured through sustainable financial products, aspects of environmental management, social development indicators, socio-ethical standards. Banks can also contribute to social advancement through initiatives such as financial literacy, financial inclusion, and social welfare programs (Kumar & Prakash, 2019). Also social responsibility is a concept that directly affects organizational performance as the external shareholders could reward the company. Organizations with low social responsibility practices will not be rewarded by the shareholders which could affect the overall performance of the organization (Fuadah et al., 2022).

According to the legitimacy theory, ESG disclosure has a purpose. The existence of an organization is also revealed by theory to be dependent on societal approval. In addition, theory suggests that organizations must share facts to persuade society that their actions are ethical and sustainable. Sustainability performance is dependent on the underlying ESG disclosure to identify and quantify the intangible value held by environmentally friendly, socially

responsible businesses with effective governance practices. In addition to providing indicators that go beyond a company's financial risks, ESG disclosure helps businesses grow sustainably (Alsayegh et al.,2020).

Literature reveals that direct and indirect channels could impact bank default risk through ESG disclosure. Stakeholder theory also shows that high ESG commitment could create more transparency in banks which can attract more investors. Apart from that, low ESG performance may not attract investors which leads to low performance of banks. (Citterio & King, 2023).

According to environmental disclosure, environmental performance is considered a valuable resource that cannot be duplicated. It improves the financial performance of banks with sustainable development. Preventing environmental risks could lower firms' debt costs and enhance board composition (Zhou et al.,2022). Banks are zero-emission industries; therefore, environmental disclosures may have a secondary effect on the performance of the bank (Shakil et al., 2019).

Through the use of green finance, banks can also start eco-friendly initiatives while screening for environmental damage through due diligence. The commitment to environmental conservation can also be made through financial products, advisory services, and socially responsible investments (Bătae, Dragomir & Feleagă, 2021).

Aulia et al. (2023) argue that bank profitability is significantly harmed by ESG controversies and that banks cannot invest in

ESG operations because of their precarious financial positions. The Legitimacy Theory contends that by making information like sustainability reports available to stakeholders, banks can promote good connections with them (Aulia et al., 2023). The institutional and legitimacy theories, which are two significant ideas, theoretically appear to explain reasons that underlie the variety of ESG disclosure the best. It looks into the impact of company variable factors such as size, risk, and performance as well as factors that are special to a certain nation for social, economic frameworks (El Khoury et al., 2023).

According to social disclosure, being socially conscious has a financial benefit for stakeholders because adopting sustainable policies will increase market value (Provasi & Harasheh, 2021). An investment strategy known as socially responsible investing focuses on both financial success and non-financial benefits, such as smart returns on social and environmental for the interests of other stakeholders (Alsayegh et al.,2020).

According to the legitimacy theory, a bank's business operations should be consistent with societal expectations, values, and beliefs. Stakeholder theory emphasizes that corporations should take stakeholder interests into account and are compatible with ESG strategies and institution performance (Izcan & Bektas, 2022). The value of the company rises together with the level of ESG transparency (Fuadah et al., 2022). Environmental disclosures can provide either positive or bad information about a particular company, depending on whether it is environmentally benign or a risk. Investors now use environmental

reporting as a keycriteria to assess the risk of their investments and alter their approach (Akhter et al., 2022).

As per the view of Gangi et al., 2019, one of the first industries to incorporate CSR is the banking sector. CSR increases shareholder wealth maximization, customer and employee satisfaction, and company ownership. On the contrary, Liao et al., 2021 conveys that CSR, on the other hand, may have adverse effects, such as agency issues. Also in line with Cosma et al., 2021, expresses that integrating CSR practices into governance and management systems will cause problems for value creation in the long run and will hinder efforts to gain a competitive advantage (Cosma et al., 2021).

The banking industry has two social responsibilities: community development and consumer happiness. Banks can increase investor trust and gain a competitive edge by embracing CSR measures (Bătae et al., 2021). According to, Citterio & King (2023) there is a linkage between a bank's Corporate Social Responsibility (CSR) performance and the quality of loan portfolios. According to the literature, CSR also has a favorable impact on market and environmental performance (Dai et al., 2022). In addition, the fulfilment of CSR obligations impedes free market competition and may have a negative Environmental, Social, and Governance (ESG) impact. Also, it will represent business and stakeholder expectations through social responsibility (Cosma et al., 2021; La Torre, Leo and Panetta, 2021). In contrast, Shakil et al., 2019 argues that more CSR initiatives will cause a company's financial situation to be less favorable than that of others. The total

financial performance of the business may benefit from the increased earnings and improved environmental performance of banks with strong governance.

Social responsibility initiatives guarantee the company's reliability. ESG considerations enable the evaluation of long-term sustainability as a symbol of social construction (Oncioiu et al., 2020). The social image will increase whenever the government framework is integrated with social duty (Wu et al.,). Corporate social responsibility will lead to value creation. Any kind of long-term investment in socially responsible behaviour helps shareholders benefit (Taliento et al.,2019). There is an impact on a company's investment from social responsibility, hurting its financial performance (Zhou et al.,2022).

According to the resource dependency theory, a strong ESG performance will help to maintain stakeholders' trust and support of a bank. A company that performs well in ESG has better corporate governance and fewer agency issues (Lian, Li and Cao, 2023).Maintaining strong and positive relationships with stakeholders allows sustainable banks to attract diverse investments (Istudor et al., 2022). Managing the stakeholders will therefore result in implementing sustainability value creation (Adu, 2022). According to agency theory, corporate governance can improve a firm's performance which consists of; diversity of culture and gender equality inside the board, board size, Chief Executive Officer-chairperson duality, compensation, independent directors, and risk governance (Menicucci & Paolucci, 2022). Corporate governance disclosure also relates to

organization ownership, size of the board and its frequency, capabilities of auditors and gender diversity. According to the literature, this association shows considerable good results for industrialized countries but insignificant beneficial results for underdeveloped countries (Lagasio & Cucari, 2019).

Corporate governance shows whether the organizational code of conduct ensures that the executives' and board members' activities are consistent with the interests of the stakeholders (Shakil et al., 2019). As per Chebbi & Ammer, 2022, reveal that organizations with established governance and few issues are more likely to engage in CSR activities. More ESG investing practices are generated by good governance since they directly recognize the social impact (Chebbi & Ammer, 2022). On the contrary, Shakil, 2021 conveys, that stakeholders will penalize companies with poor market ESG performance. All stakeholders are acting responsibly. For formal contracts to exist, corporate governance anticipates having a positive relationship with stakeholders (Gangi et al., 2019). Stakeholder harmony is essential for sustainable development. Therefore, a form should address all of its stakeholders to function well (Zhou et al., 2023) .

According to corporate governance disclosure, it is crucial to report on stakeholders who are eager to learn more about ESG disclosure. Disclosing such information allows stakeholders to quickly analyze detailed data (zeytinoğlu & Tumpach, 2023). Corporate governance practices have been the subject of inquiry and concern in various circumstances.

Corporate governance will accelerate the organization's growth while enhancing its social and environmental performance (Bermejo Climent et al., 2021). Stakeholders are represented in the company's decision-making culture (Gutiérrez-Ponce and Wibowo, 2023). Stakeholder theory, legitimacy theory, and agency theory all express why businesses engage in information disclosure to stakeholders. These theories also suggest a connection between corporate governance and transparency practices (Khaireddine et al., 2020). By properly providing information, the board can govern managers' behaviour and the interests of stakeholders. This reveals that organizations with established governance and few issues are more likely to engage in CSR activities. More ESG investing practices are generated by good governance since they directly recognize the social impact (Nicolò et al., 2022). Corporate governance demonstrates whether the organizational code of conduct ensures that the activities of executives and board members are consistent with the interests of stakeholders (Shakil et al., 2019).

According to the literature, a bank needs long-term stability in its operations, hence complying with ESG disclosure as a sustainable practice could perform better. Literature also emphasizes its importance in risk management, creating long-term value, enhancing reputation, gaining access to financing, engaging stakeholders, and complying with regulations. Despite this, current reporting standards, technological advancements, regulatory pressure, and stakeholder engagement all point to a future in which ESG disclosure will continue to be a crucial instrument for advancing sustainability and ethical corporate practices.

2.4 Environmental, Social, and Governance disclosure for sustainability in the banking industry

Environmental, Social, and Governance (ESG) disclosure has become an increasingly common tool for sustainability in recent years. This study of the literature intends to explore the relationship between sustainability and ESG disclosure in the banking sector and how ESG disclosures affect the banking sector's motivation to pursue sustainability.

An economy's well-functioning financial sector is a cornerstone that supports sustainable growth (Jílková, 2023). Investors must fund organizations that have a track record of addressing environmental and social challenges. The organizational socially responsible investments are thus created by this investment choice. The environment pillar is the most crucial to maintain out of the three pillars. It is mentioned that a three-pillar balance is a prerequisite for sustainability. Both internal and external human behaviour inside a company can have an impact on its ability to be sustainable (Clément et al., 2022).Sustainable business strategies allow businesses to obtain a competitive edge by boosting output and lowering systematic risk(Rahi et al., 2022) .Thus, ESG performance is also a management quality metric that concentrates on a company's capacity to maintain a sustained competitive advantage. Apart from that organizations should look at the data of these three pillars

Environmental, Social, and Governance (Taliento et al., 2019).

ESG reporting procedures of a company are predicted by its ESG engagement (Crespi & Migliavacca, 2020). Environmental, social, and other types of risks have evolved as a result of the banking industry's move towards sustainability. Through ESG initiatives, stakeholder trust will increase, and investments in these projects will promote sustainable development (Shakil et al., 2020). Whatever the case, resource management has become increasingly important for today's sustainability. Sustainable finance is a major force in the financial sector. Economic, social, and environmental pillars were initially established by the Global Reporting Initiative (GRI) in 2014. These guidelines enable businesses to comply with ESG disclosures and support sustainable development. Bank credit ratings will also improve as a result of ESG disclosure ratings (Pulino et al., 2022).

An institute can determine whether managers are acting in their interests through ESG performance because it is not explicitly stated that the result of providing such information should be well-governed management decisions (Gillan, Koch and Starks, 2021). The economy is now shifting away from a typical financial structure and toward social and environmental challenges. These combinations that move toward sustainable development should be implemented at the operational level (Sciarelli et al., 2021). If an entity makes a larger investment through socially responsible investing, the systematic risk

will be lowered proportionately (Zhou et al., 2022).

Sustainable finance has a direct influence on sustainable development. Sustainable development will be aided by a financial system's depth, accessibility, efficiency, and stability (Ziolo et al., 2019). According to previous literature it indicates, the performance of a bank is measured by its capacity to generate sustainable profitability, which is essential for banks to remain operational and to provide stakeholders with reasonable earnings (Hoque et al.,2022). Understanding the relationship between economic, environmental, social, and governance goals is another purpose of sustainable reporting. This allows stakeholders to communicate via the internet.

Prior literature also reveals that the key motivations for banks to be sustainable are social development and the reduction of environmental risk and the control of environmental issues. The culture of green investment, community development, environmental management, and protection of shareholders' interests will be strengthened through these sustainable banking practices (Kumar & Prakash, 2020b). Risk reduction is also a crucial component of sustainability and being green in business. Corporate governance closely links to management, but it also encourages moral business conduct (Miah et al.,2021).

Investment in different initiatives that construct the environmental system to analyze the risk associated with sustainable growth is one way that green banking strategies highlight sustainable growth (Manoj et al.,2023). ESG disclosure has

many advantages, but there are still barriers to its adoption in the banking industry. An emphasis on long-term value creation, stakeholder participation, third-party assurance for credibility, technical advancements, benchmarking against industry peers, and integrated reporting that combines financial and non-financial data are just a few of the strategies that go into effective ESG disclosure. These tactics provide companies with a leg up in a society where ESG is a major consideration.

3. METHODOLOGY

The study is done through a "Qualitative Research Methodology". The qualitative research method is a type of study gained through views and observations of which are acquired through non-numerical data ((Ussif et al.).This research supports illuminating the factors that are influencing green banking ESG disclosures for sustainable development in the banking industry. The study's purpose is exploratory.

Given the small sample size and reliance on interviews to collect qualitative data, interpretivism is the methodology used for this study. The research approach will be inductive. The research will be on a qualitative approach. So the research will be more narrowly targeted to look at a specific phenomenon, and qualitative interviews will be conducted as the research strategy. The interview guide is backed by certain theories extracted from the existing literature. A casual study will be conducted for the study. The research will have a cross-sectional period during the period starting from September 2023. At a single point in time, data will be collected. Research based on

primary data. The data will be gathered through the mono method. Data will be gathered from six individuals representing two private banks, in Western Province. In recent years, there has been a significant increase in research on this ESG disclosure, with theoretical frameworks underpinning the theories.

3.1 Data Collection

Data will be gathered from six employees of ABC Bank and XYZ Bank, two private banks in Western Province, Sri Lanka. These banks are involved in every type of financial transaction. According to the Central Bank of Sri Lanka, there are twenty-four (24) Licensed Commercial Banks and six (6) Licensed Specialized Banks in the country as of 31st December 2022. (Central Bank Of Sri Lanka,) Two of those banks were chosen from the Western Province. For data collection, six (6) employees were selected. Five employees worked at ABC Bank and other employee worked at XYZ Bank. Five employees of ABC Bank cover their job areas related to credit-related functions, sustainable activities, audit and branch banking activities. An employee of XYZ Bank mainly covers the area of sustainable banking practices. All employees are specialized in their professional areas and have more than ten years of banking experience. The table 1 provides some basic information about the six individuals who were chosen.

Table 1 Summary of the selected individuals

Profession	Bank	Department
Assistant General Manager	ABC Bank	Credit Department
Chief Manager	ABC Bank	Credit Department
Senior Manager	ABC Bank	Sustainable Department
Chief Internal Auditor	ABC Bank	Internal Audit Department
Deputy Manager	ABC Bank	Regional Sector- Head Office
Assistant Manager	XYZ Bank	Sustainable Department

Data was collected through semi-structured interviews. Primary data was gathered through semi-structured face-to-face interviews with five employees and interviews via a technical platform with one employee and with six individuals using an interview guide consisting of 15 questions.

3.2 Data Analysis and presentation

Interview respondents were encouraged to give their insights through the discussions. Interviews lasted approximately 30-40 minutes for each individual, whereas the two employees who are already attached to the Sustainable Departments held nearly one-hour discussions to elaborate their personal views on the subject. The female percentage of the selected conversations was 0.16 (1 out of 6 interviews), while the male percentage was 0.83 (5 out of 6 interviews). The age of the participants was not determined during the interviews, but it was estimated to be between 35 and 45 years old. All participants agreed to have their interviews audio recorded and the data was transcribed.

MAXQDA 2022 software was used to identify main codes and sub-codes. Then Microsoft Excel was used to analyze main themes and sub-themes through a thematic analysis. Codes were created based on the interviewees' preference points. Twelve main codes were created by analyzing data. Then 127 sub-codes were identified according to the extracted data through interviews. The main codes extracted from the data set are shown in the Table 2 below.

Table 2 Main codes

Main Codes
Green work environment
CSR programmes
Policies
Innovation of products
Sustainability practices
Audit committee practices
Resources
Sustainable reporting
Green finance
Responsible bank
Sustainable products

The whole codes and sub-codes were then collected in an Excel file and then analyzed using inductive thematic analysis. Thematic analysis (Wan Jusoh, Abdul Jobar and Md Yusoff, 2022) aids in the identification and reporting of patterns in collected data, allowing the researcher to organize and explain the data in depth. Using Excel, sub-

codes were used to analyze what was coded for.

Ex: The main code 1 "Green Work Environment" has six sub codes. Then the scope of all sub-codes analyzed what is being coded for. According to the interviews, all discussed the main code of "Green Working Environment" and they commented that changing the environment is not an easy task but can be done with more awareness. The table 3 below shows the main code 1 and the sub codes and extracted summary data.

Table 3. Main code 1, sub codes and extracted summary data

Main code/sub codes	Coded for
Green work environment	talked about Green work environment
good / more aware/ not be easy/ trying to implement/ send some energy saving tips/ always working on that.	changing the environment is not an easy task but needs more awareness
Bank's size	"Mmm... Resources are sufficient. We have human resources. Investors are positive about this. Though we are committed the capital is less."
Customer satisfaction	"We already launched a savings account, a low-carbon product for healthy community savings build-up purposes. For customers, we reward through interest, and for employees, we offer reward systems."
Employee behaviour	"very low. They do not know the importance of it"
Training and rewards	"We launched some programs to them like sustainability championship program, introducing sustainable gardens".
Regulation framework	"Reporting.Hmm. Without reporting we would have nothing."
Stakeholder pressure	"We have to provide certain disclosures annually. beyond that, we should be informed through meetings also. investor pressure is there."

Figure 1- Extracted quotes from the interviews

This chapter primarily discusses how data is gathered and analyzed using supporting software and Excel sheets. The section discusses how the data is presented by developing main codes and sub-codes.

4. RESULTS

As previously stated, the interviewees chosen represent key bank professions. The extracted quotes from the interviews are attached (Figure 1). Three major themes emerged from the extracted content through inductive thematic analysis. The themes and subthemes are explained in Table 4. The descriptions are supported by direct quotes from the interviews.

Table 4. Summary of main themes and subthemes

Main Theme	Sub Themes	Remarks
Green Initiatives	Bank's size Customer Satisfaction	green initiatives influenced green banking ESG disclosure practices
Employee awareness	Employee behaviour Training and rewards	employee awareness is needed to establish ESG disclosure practices
Policies and guidelines	Regulation framework Stake holder pressure	policies pushed the industry to adopt with sustainable practices

The current study focuses on finding out the factors influencing ESG disclosure for sustainable growth in the banking industry in Western Province, Sri Lanka.

Theme 1: Green Initiatives

The first theme emphasizes how green initiatives aid as a factor for green banking ESG disclosure towards banking sector sustainability. This theme is segregated into two sub-themes: bank size and customer satisfaction.

Bank's size

The resources that a bank could invest in green initiatives for sustainable development are heavily influenced by the size of the bank.

Customer Satisfaction

Customers are more likely to embrace green initiatives. Focusing on customer willingness by promoting environmentally friendly products will increase customer satisfaction.

Theme 2: Employee awareness

The second theme emphasizes how employee awareness contributes to green banking ESG disclosure and sustainability in the banking sector. This theme provides two sub-themes; employee behaviour and training and rewards.

Employee behaviour

Employees' positive behavioural patterns are required to influence industry sustainability.

Training and Rewards

Although banks currently have training practices, the rewards for those sustainability practices are low.

Theme 3: Policies and guidelines

When the interviews were analyzed, it was discovered that the policies and guidelines

force the banks to engage in sustainable banking practices. This main theme of policies and guidelines supports two sub-themes: a regulatory framework and stakeholder pressure.

Regulation Framework

Banks always align their strategies with the regulations provided by their main regulatory body, the Central Bank. As a result, the regulatory framework of different bodies influenced the banking sector's sustainability.

Stakeholder pressure

Stakeholder engagement is a critical area in banks. Investors in developed markets are highly obligated to disclose sustainability practices, so when they invest, they accept the same information from our banks by acceptable standards.

The first objective of the research is to investigate the significance of the green banking concept for the banking industry. It investigates the significance of directing sustainability in the banking sector using previous literature and findings. The key areas that require green banking concept for the banking industry are social risk management, social performance management, women empowerment, sustainable finance, operational excellence (risk, business continuity, health & safety), culture and brand build-ups, corporate social responsibility (CSR), financial inclusion, etc. Banks should adopt this green banking concept to be profitable, attract investments, and be pioneer in an economy by complying with the regulations.

When banks promote their services, banks should adhere to the term "Environmental, Social, and Governance" disclosure. Noncompliance will have a significant impact on the sector and will be treated as a violation of regulations. Sri Lanka is on its way to becoming a green taxonomy, and banks play a critical role in achieving that goal by complying with environmental, social, and governance disclosures. Insights on ESG disclosure and its impact on sustainability in the banking industry have also been analyzed as part of the second research objective. Compliance with factors analyzed as research findings; green initiatives, employee awareness, policies and guidelines will have a significant impact on the banking industry's sustainable development.

Research findings support the third research objective; factors that are influenced by green banking ESG disclosure for sustainable development in the banking industry. Finally, the research establishes the objective of providing strategies for implementing ESG disclosures as an organizational excellence. Promoting value chain finance to capture the international market while achieving green banking ESG disclosure practices is one of the key areas that banks must address. Another strategy to be implemented is the introduction of project finance and the provision of training and janitorial services to customers. Customers will also be aware of areas that need to be improved, which will benefit banks by allowing them to finance more. It was identified that employee awareness is critical for long-term sustainable development, so providing training through e-learning platforms may be beneficial in

achieving operational excellence for the organization.

Green banking ESG disclosures should be applied to operational activities by banks. Introducing a paperless culture, and energy savings tips can do much better for the banking industry because they are already equipped with fully digitalized applications. If the banking industry tightens up on these ESG disclosures through internal policies and guidelines, banks may attract foreign investments because they are also aware of which institutions to invest in. Accounting standards for sustainability reporting are also nearing completion. Thus, incorporating these findings into business strategies will benefit the banking industry. The above strategies for achieving operational excellence in the banking industry could be suggested based on the research findings and insights gained from interviews.

4. DISCUSSION AND CONCLUSION

The main findings of the research support the factors that are influencing green banking disclosure which are Green Initiatives, Employee awareness, Policies, and guidelines. The findings align with the recent research with also strengthen the theoretical domain. Finding 1 (main theme) of the research; green initiatives supported by another two findings (sub themes) of; the bank's size and customer satisfaction. Finding 2 (main theme) of the research; employee awareness supported by another two findings (sub-theme) of; employee behaviour and training and rewards. Finding 3 (main theme) of the research; policies and guidelines supported by another two

findings (sub-themes) of; regulation framework and stakeholder pressure.

The study findings add to existing knowledge and provide new insights for green banking ESG disclosure practices to achieve the banking sector's sustainability. It would be interesting to interview professionals with a strong interest and knowledge in this field to provide relevant findings to the entire industry. The findings are more reliable and realistic, which could easily lead to banks directing them to green banking ESG disclosure practices to gain sustainability. Banks can strengthen their policies by incorporating these factors and developing appropriate strategies to achieve sustainable development.

The study will be limited only to the banks located within Western Province, Sri Lanka. Future research can be conducted to include other districts to gain a better understanding of whether banks are engaging in these practices and whether they are aware of those. This study attempts to investigate the factors influencing ESG disclosure on sustainable growth. Future research can be conducted by examining those factors and their impact on bank performance profitability and other indicators.

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The Impact of Logistics Outsourcing on Company Competitiveness: A Study of Manufacturing Organizations in Sri Lanka

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ABSTRACT

The current corporate environment is becoming more competitive at a faster rate than it has in previous decades. An environment in which businesses must compete will get more competitive as there are more vendors of a given good or service. To succeed as an organization, enterprises must adapt quickly, effectively, and efficiently to changes in the marketplace. Most of the studies have focused on various ways to achieve company competitiveness in organizations and Logistics Outsourcing (LO) practices are considered contributing factors in achieving company competitiveness. This study explored the impact of LO on company competitiveness. The study included a sample of 104 people and used a questionnaire as the main tool for gathering data. The developed hypotheses were tested by using multiple regression techniques utilizing the SPSS software. The results indicated that LO practices have a positive and significant impact on company competitiveness in terms of time-based and cost-based competitiveness. Findings demonstrate how crucial LO is for managers to boost competitiveness and business contributions. Managers ought to intentionally give LO top priority, making use of outside knowledge and choosing partners with care. Comprehensive cost-benefit analysis, long-term viewpoint adoption, and a balanced emphasis on corporate contributions are examples of practical consequences. Support from the government and improved training programs help to make LO implementation even more successful. Therefore, the study suggested that manufacturing organizations in Sri Lanka will be able to increase company competitiveness by providing a high concentration on LO.

Keywords - **Cost-based Competitiveness, Logistics Outsourcing, Time-based Competitiveness**

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1. INTRODUCTION

1.1 Background of the Study

A dramatic change in the economic environment over the last few decades has affected many different industries, which has made firms and their complex supply chains fierce competitors. Thus, businesses under tremendous pressure to find innovative solutions to maintain their operations and maintain their competitiveness (Zhu et al., 2017). As a result, businesses are focusing on LO. Therefore, LO has become the industry standard and is now heavily involved in business operations (Christopher, 2016). The academic community's interest in LO has grown in tandem with enterprises' concentration on the concept (Akbari, 2018), resulting in an exponential rise in LO literature in recent years.

The outsourcing of logistics has significantly increased over time (Hirschheim et al., 2014). In every economy, logistics has emerged as one of the sectors with the quickest growth rates. Outsourcing logistics operations to a third party is becoming more popular in today's society because of its important role in gaining competitive advantages. To focus on their core capabilities, organizations are increasingly outsourcing their logistical operations to third-party logistics (3PL) providers, according to Vaidyanathan (2005). To advance with minimal cost structures, businesses typically outsource their logistical operations. Grewal et al., (2008) claim that outsourcing—one of the fastest-growing trends in the globe and an essential part of any kind of business activity—is contributing to the idea of

globalization. "The use of a third-party provider for all or a portion of an organization's logistics operations" and "long and short-term contracts or alliances between manufacturing and service companies and third-party logistics providers" are the definitions of logistic outsourcing given by Deepen (2007:3). Rahman (2011) found that outsourcing is driven by several variables, including as reduced costs, cheaper capital expenditures, increased flexibility, access to new markets and technology, and a concentration on core competencies. Furthermore, Premarathne (2012) emphasized that outsourcing logistical tasks lowers excess inventory, manufacturing costs, lead times, resource shortages, and administrative expenses, and boosts production flexibility and quality, all of which help businesses focus more effectively on their core competencies. Shipment consolidation, order fulfillment, warehouse management, fleet management, reverse logistics, rate negotiation, carrier selection, logistics information systems, inventory management, product assembly, and order processing are just a few of the services offered by third-party logistics organizations (Seneviratne & Premarathne., 2017).

Previously, the majority of businesses handled all tasks internally, but this is slowly beginning to change since LO is now a crucial part of the strategic plans of the majority of businesses in the manufacturing and service sectors (Solakivi et al., 2013; K€onig & Spinler, 2016). LO's basic idea is to free up outside businesses to handle non-core tasks while businesses concentrate on their main lines of business. Thus, according to Zailani et al. (2017), LO-based

businesses recognize the value of concentrating on the "right things" as opposed to trying to do "everything." Maximizing logistics value through cost benefits and quick, dependable service to satisfy client requests is a major goal for most businesses. According to Bulgurcu & Nakiboglu (2018), companies can optimize their logistics value by strategically opting for LO. Transportation, warehousing, information technology, inventory management, freight forwarding, and material handling are among the logistics tasks that are commonly outsourced to outside businesses (Huo et al., 2016; Shi et al., 2016). Businesses can benefit greatly from LO. Effective risk reduction, gaining access to complementary resources from outside businesses, attaining cost- and time-based competitiveness, and improving the financial performance of corporations are some of the main benefits of LO.

The manufacturing sector in Sri Lanka plays a major role in the economy, as it has made Sri Lanka a world-class manufacturer, supplying global super brands for over three decades. The mainstay of the country's economy and the primary driver of all logistics demand is the manufacturing sector (Zheng et al., 2021).

Sri Lanka is a country under development. Out of the four industry subsectors, manufacturing has the largest percentage of all industrial establishments in the nation (85.4%), according to the Department of Census and Statistics' 2019 Census Statistics (Herath & Endagamage, 2022).

Production and Manufacturing (M&P) for both local and foreign markets has always been essential to Sri Lanka's economic growth. According to World Bank estimates, Sri Lanka's manufacturing sector contributes, on average, about 18% of the country's GDP. It is estimated as 16.1% in the Central Bank of Sri Lanka Report for 2021. The industry mostly consists of rubber, plastic, fabricated metal, food and beverage, and chemical items, even though clothing and textiles make up the largest divisions (Daily ft, 2023).

Outsourcing of logistics has a big impact on how manufacturing companies manufacture and distribute goods to their clients. Indeed, a lot of manufacturing companies don't own or manage the transportation and warehousing equipment utilized for incoming and outgoing shipments from their facilities (Kenyon et al., 2009).

Globally, LO is expected to increase by 12% per year (Kerr 2004). Its importance has increased for several reasons. Even though the role of logistics service providers has become more strategic and efficient logistics performance can be a major competitive advantage, the processes used to evaluate and select these providers have remained the same. Because of this, a lot of businesses still view logistics as an incidental function. They therefore don't provide logistical services that are adequately effective or economical, and some of them can even have a detrimental impact on their ability to conduct business (Bhatnagar and Viswanathan 2000; Gould 2003; Razzaque & Sheng 1998). Hence, the purpose of this paper is to offer advice to practitioners regarding the appropriateness of outsourcing logistics services and the best ways to do so.

The purpose of this research is to investigate the impact of LO on company competitiveness. This will lead to identifying the LO of manufacturing organizations for enhancing company competitiveness in manufacturing industries.

2. LITERATURE REVIEW

2.1 Introduction

The purpose of this section is to review the relevant literature related to the research problem. Within the research problem, the selected literature comes under areas including LO practices in manufacturing organizations. Thus, the following sections focus on the empirical review of the study. The main argument that the present literature review develops is as follows: LO has an important role to play in enhancing company competitiveness in manufacturing organizations.

2.2. Company Competitiveness

Competitiveness is a business-focused metric for evaluating or comprehending an organization's manner of operation in a given environment (Heywood and Kenley, 2008). Company competitiveness, which is measured using a wide range of indicators and assessment models, is the unique ability to compete in a certain market at a specific time. This idea encompasses a variety of elements that affect both the production's success and its manifestation in the context of rivalry with rival producers. It embodies a set of traits whose composition and structure are currently not clearly defined. The influence of numerous elements from both the external and internal corporate environments can be seen in how competitive a firm is. They are usually investigated using tools like PEST, IND, COMP, and SWOT analysis. They result from the general environment, the general industry environment, the industry competitive forces, and the internal environment (Velkov, 2022).

2.2.1. Time-based Competitiveness

Numerous studies have been conducted, all of which aim to emphasize the value of time-based competition and its applicability to the management discipline. Although time-based rivalry is relatively new in the logistics industry, it has emerged as a significant source of competitive advantage for the majority of logistical organizations (Stalk, 1988). Organizations have been able to reduce their consumption time in their supply and logistical chains in addition to production sectors. Organizations with this efficiency and capability have gone beyond the boundaries of the traditional competitive advantage to gain a time advantage. The concept of time-based competition has gained acceptance as a competitive strategy that emphasizes time as the primary and most important factor in gaining and maintaining a competitive advantage. The time spent or required for proposing, developing, producing, selling, and delivering items is to be reduced. The corporate sector has experienced continuous change over time, and as long as there is competition, technology, and shifting consumer wants, progress will continue (Baah, 2019).

Stalk (1988) outlined how businesses could get a competitive edge by competing on speed to effectively and efficiently meet client wants. Since then, the latter decade of

the 20th century and the beginning of the 21st century have seen a significant increase in the emphasis on time as a major source of competitive advantage (Azzone et al., 1991; Blackburn, 1990). These researchers acknowledged that a corporation may gain competitive supremacy through time-based competition, although some other researchers disagree. The prevailing beliefs hold that "doing things in a hurry means producing defective goods," therefore when speed is the primary objective, time-based competition, as some scholars have argued, simply drives up costs and lowers quality. Therefore, it may seem contradictory to some in conventional operations management to claim that a corporation that is successful in establishing time-based competition decreases costs while increasing quality. On the other hand, a substantial amount of evidence suggests otherwise; Schmenner (1988) and Lieberman et al. (1990) assert that time-saving measures resulted in higher output and lower expenses.

Additionally, studies conducted by several academics showed that organizations enhance their quality to the best of their ability or at least significantly after putting quicker response mechanisms in place. Analyzing the methods used by manufacturers who see speed as a barrier will help you spot a time-based competitive advantage (Sapkauskiene & Leitoniene, 2010). Traditional cost-based competition, which relies on reactive reaction, can only compete with time-based competing tactics by using extra inventory, giving the impression that responses are occurring more quickly. This explains why time-based competition is associated with

stronger growth rates and profit margins, particularly in the logistics industry, while also increasing expenses and decreasing profitability for organizations that are reactive to time (Baah, 2019). In their studies, Blackburn et al. (1991, 1992) and Tammela et al. (2008) provided evidence that a company that ensures faster delivery can cut costs and increase market share. The strategic role of time is expressly acknowledged by time-based competition theory. The management of time by organizations is recognized as a powerful source of competitive advantage in time-based competition (Stalk, 1988). The main concept of time-based competition, according to Abdinnour-Helm (2000), Klimov & Merkuryev (2008), and Banyte (2009), is to shorten the duration of the following tasks: planning, designing, product creation, innovation introduction, production, supply, marketing, and distribution while considering consumer needs and expectations. Time-based rivals speed up the flow of information and goods to be responsive and draw in the most lucrative clientele (1996; Hum & Sim; 1988; Stalk).

2.2.2. Cost-based Competitiveness

Cost is frequently cited as a key factor in acquiring an advantage across a range of businesses. Due to client expectations for cheap prices and their willingness to pay for competing businesses' low-cost goods and services, businesses have pursued CBC for many decades (Anwar, 2018). A company achieves CBC when it can produce goods or provide services at a price that is much lower than that of its competitors. Therefore, to be cost-competitive,

businesses must take particular steps to reduce costs throughout the value chain to a level that is appreciably below what other businesses in the same industry are offering (Shao & Oinas-Kukkonen, 2018). If cost reduction is a strategy, companies are expected to offer customers the same value that might have been obtained from competitors' products, but at the lowest reasonable price (Porter, 1985). Operational effectiveness, cost minimization, and the implementation of stringent cost control policies throughout a company's supply chain are the foundations for using cost as a source of competitive advantage (Heywood & Kenley, 2008). CBC can be attained by a variety of techniques, such as scale production (economies of scale), the innovation of manufacturing techniques, and the outsourcing of logistics tasks (Afum et al., 2021).

2.3. Logistics Outsourcing

LO can be characterized as a method of business management in which a company assigns its tasks to an outside party, who then completes them on the company's behalf. Consequently, hiring an outside party to complete a business' tasks is more effective and efficient than using local resources. The full "Outsourcing business activities" process, which accepts the majority of management issues (Mulama, 2012). After getting greater facilities and improved performance within the business, a corporation can boost both its resources and its capabilities via outsourcing (EspinoRodrguez & Padrón-Robaina, 2004).

Thus, outsourcing logistics operations has developed into a crucial strategy that aids a company organization in strengthening its capabilities and resources to achieve competitive advantage. Outsourcing techniques are very beneficial to businesses. Nevertheless, it involves issues like an inability to manage logistics-related activities, excessive reliance on their service providers' suppliers, and the elimination of profits, all of which can be resolved with the help of a framework (Thywill, 2010).

In the value chain of service delivery or the conversion of raw materials into finished items, logistics is definitely a crucial success factor. The business owners and operations manager must take a risk in conceptualizing the best strategy and carrying it out according to a plan for the logistics solution to be effective and efficient (Nurain & Adesunkanmi, 2022). According to Qureshi et al. (2007), an organization must make wise choices in a variety of linked areas, such as choosing reliable vendors, negotiating delivery conditions, and employing the appropriate transportation, in order to have an efficient flow of freight.

The majority of hotels outsource lower-level logistical services because they feel that doing so will have an impact on the operations of many different goals (Espino-Rodriguez & Padrón-Robaina, 2004). Espino & Padron (2004) contend that outsourcing operational approaches has a promising future. As a result, they choose outsourcing techniques rather than cost-cutting measures. simply cutting costs may help hotels improve their financial performance; outsourcing simply enhances quality & flexibility.

According to a research study by Danish & Siddiqui (2019) all Fast-moving Consumer Goods (FMCG) companies in Pakistan have already begun, and they all rely on outsourcing business operations. That clarifies the significance of using LO techniques to get a competitive advantage. LO techniques also aid in boosting enterprises' productivity and lowering their production expenses. To boost network outsmarting and reorganization within the organization, the majority of commercial entities have turned to outsourcing logistic-related services (Thywill, 2010). When examining previously conducted research studies, some independent factors can be identified; nevertheless, just two variables have been chosen for this research study.

Both warehouse management and transportation management are being outsourced. These two independent variables will be the only ones used to perform this research investigation.

2.3.1 Outsourcing Transportation Management

Transportation management outsourcing has developed into a significant commercial strategy to improve supply chain operations. The effectiveness of supply chain management is significantly impacted by transportation outsourcing (Bardi & Tracey, 1991). Additionally, outsourcing transportation has lowered the cost of producing goods (Kenyon & Meixell, 2011).

Most tasks that can be outsourced include transportation, reverse logistics, and freight forwarding. Over 80% of business organizations hire outside logistics service providers to handle their transportation-related tasks. It has been shown through prior research studies that the biggest expense a company entity will incur in supply chains is transportation. Compliance, cost, and speed are the three criteria that need to be met when choosing a transportation mode.

2.3.2 Outsourcing Warehouse Management

In its simplest form, a warehouse refers to the location where all raw materials and completed commodities are kept. According to contemporary logistical arrangements, inventory gathering to satisfy consumer needs is more accurately reflected by warehouse processes (Herath et al., 2020). The warehouse system is a crucial component of the supply chain management system. The majority of corporate entities, according to past research studies, outsource outbound warehousing because they are unable to provide the services and storage that a company needs. The application of 3PLS has improved in Australia. The rise in the utilization of warehouse-related services from 46% to 60% served as confirmation.

2.4 Logistics Outsourcing & Time-based Competitiveness

In the literature on logistics management, the relationship between LO and TBC is currently developing. Regarding the relationship between these two significant constructs, there have been put forth two opposing viewpoints. In light of this, several academics have generally argued that LO improves customer response and the prompt delivery of services, which aid

businesses in achieving time-based competition (Afum et al., 2021). On the other hand, conflicting opinions are held by different academics. Olah et al. (2018), for instance, suggest that outsourcing companies can meet delivery dates, particularly when they are within a given tolerance or acceptable time frame, helping them to acquire a competitive advantage over rivals.

According to Pellicelli (2018), outsourcing companies can improve their flexibility, agility, and reactivity by hiring the services of capable external third-party suppliers. Furthermore, according to other researchers (Green et al., 2008; Zailani et al., 2017), LO gives businesses the chance to access the complementary skills of outside businesses, which boosts operational efficiency, cuts lead times, increases flexibility, and accelerates delivery timeliness.

On the other hand, notwithstanding their limitations, certain empirical research has discovered a bad relationship between LO and TBC. It was shown that outsourcing has a favorable impact on flexibility but a negative impact on speed and on-time delivery in a study by Dabhilkar & Bengtsson (2008) among Swedish enterprises. A study on the classification of LO levels on service performance in the food processing industry was also carried out by Hsiao et al. in 2010. They discovered that there is no direct relationship between outsourcing and service performance in terms of delivery consistency, lead time, and flexibility. In this study, the researcher proposes that enterprises attain time-based competitiveness through the provision of

quick and on-time delivery services as well as a prompt response to consumer requests.

2.5 Logistics Outsourcing & Cost-based Competitiveness

Cost savings are reportedly recognized as a key factor in companies choosing to outsource (Huo et al., 2016). Therefore, it means that LO aids businesses in achieving cost benefits, thereby enhancing CBC. Compared to businesses that outsource more, those with lower degrees of outsourcing are more likely to experience greater costs (Solakiviet al., 2013). According to reports, businesses can save an average of 11.8% on logistics costs, 24.6% on logistical assets, and 8.2% on inventory costs by utilizing LO (Rui and Yip, 2008). To support this idea, it is stated that outsourcing to third-party logistics providers is desired to reduce total operational costs and attain CBC (Langley, 2019). According to a study conducted by Wang et al. (2017), Australian businesses use LO as a means of reducing production costs. Kiliç et al. (2016) also found that outsourcing logistics tasks to qualified service providers is a great option for businesses looking to conserve resources, become leaner, and lower unit costs.

According to Nyameboame & Haddud's (2017) study findings, LO increases service quality, dependability, and responsiveness, and lowers costs by 56.3%. Accordinly, LO can be seen as a vital tool that businesses can use to cut back on logistical and operational expenses. The aforementioned thesis implies that businesses can rely on LO to cut costs and acquire a sustainable competitive advantage rather than cutting expenses based on their manufacturing

stage or internal operations. Even though the studies mentioned above show a positive relationship between LO and CBC, some researchers (Kremic et al., 2006; Villani & Greco, 2018) contend that outsourcing techniques driven by opportunistic behavior often endanger a company's strategic goal of lowering short-term costs. This shows that outsourcing may occasionally have unfavorable cost effects for businesses or cease to be the best option for businesses due to perceived hidden costs. Contrasting the aforementioned viewpoint, the researcher backs a strong connection between LO and CBC.

2.5 Logistics Outsourcing, Time-based Competitiveness & Cost-based Competitiveness

A previous research study done on the topic of "Examining the links between LO, company competitiveness and selected performances: the evidence from an emerging country" the researcher has shown that LO has a significant positive impact on time-based competitiveness & cost-based competitiveness (Afum et al., 2021).

3. METHODOLOGY

3.1 Research Design

The study employed a deductive research approach, underpinned by the development of a conceptual framework and the adoption of a survey research strategy. A mono-method quantitative design was selected to collect numerical data exclusively. The research adopted a cross-sectional time horizon, collecting data at a single point in time within a specified duration. Utilizing a simple random sampling technique, a sample of 104 managerial-level employees from manufacturing organizations was selected. Data collection was carried out using a structured questionnaire. Hypotheses were tested using multiple regression analysis, facilitated by the Statistical Package for the Social Sciences (SPSS).

3.2 Conceptual Framework

Conceptual framework is the organization of concepts, assumptions, beliefs and theories that show how the research is conducted. A model or conceptual framework could describe the synthesis, effectively representing an "integrated" approach to solving the issue (Liehr & Smith 1999). The following framework is created to discover solutions to the research topic based on the reasonable foundation described in the preceding study. The model was developed using the LO and company competitiveness literature. As a result, it will hypothesize the relationship of the study and make the study context easier to understand.
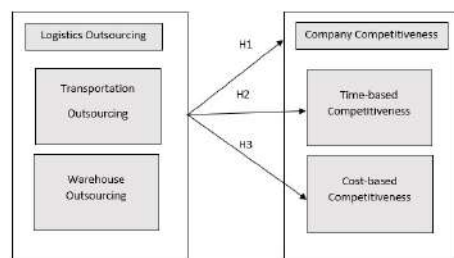
Figure 01: Conceptual Framework

4. RESULTS AND DISCUSSION

4.1 Summary of the Hypothesis Testing

Hypothesis 1 investigated the relationship between LO and Company

Competitiveness. It was hypothesized that there would be a relationship between LO and Company Competitiveness. The results demonstrated positive and significant paths from LO and Company Competitiveness. (B = 0.773, p < 0.000). Thus, hypothesis 1 was supported.

Hypothesis 2 tested the relationship between LO and Time-based Competitiveness. It was hypothesized that there would be a relationship between LO and Time-based Competitiveness. The results suggested that the relationship between LO and Time-based Competitiveness was positive and statistically significant (B = 0.836, p < 0.000). Thus, hypothesis 2 was supported. This aligns with earlier research (Green et al., 2008; Olah et al., 2018) which revealed that outsourcing gives businesses the chance to acquire complementary skills from other outside companies, which helps to improve operational flexibility, reduce lead times, and improve delivery timeliness, particularly within a reasonable time frame. Our findings are particularly consistent with those of Zailani et al. (2017), who found that one of the main drivers of LO by Malaysian businesses is the ability to respond quickly to client needs and reduce lead times. The current result suggests that, by adopting LO as a viable option, Ghanaian enterprises can condense the difficulties linked to meeting client requests and increase their delivery timeliness. This typically has a very favorable effect on TBC. The fact that Ghana's logistics industry is booming, particularly with the entry of increasingly capable third-party logistics companies, is another explanation for this outcome. As a result, businesses are utilizing the services provided by these third-party logistics companies to satisfy client demands more quickly and easily.

Hypothesis 3 investigated the relationship between LO and Cost-based competitiveness. It was hypothesized that there would be a relationship between LO and Cost-based competitiveness the results revealed that the relationship between LO and Cost-based competitiveness was positive and statistically significant (B = 0.711, P < 0.000). Hence, a hypothesis 3 was supported. This result is in line with the findings of Wang et al. (2017), who demonstrated that Australian companies employ LO strategies to reduce their manufacturing costs. Kiliç et al. (2016) provided additional evidence for the outcome, indicating that outsourcing allows large industrial companies in Turkey's Marmara region to become leaner, save resources, and lower unit costs. Our findings, however, run opposed to those of Villani and Greco (2018), who found that companies in northern Italy who outsourced due to opportunistic behavior frequently experienced unfavorable cost consequences. In comparison, our conclusion implies that Ghanaian enterprises are effectively increasing their cost-based competitive position.

Table 01: Summary of the Findings

Hypothesis	P Value	Std. Coefficient	Result
H1	0.000	0.773	Accepted
H2	0.000	0.836	Accepted
H3	0.000	0.711	Accepted

4.2 Discussions & Findings

4.2.1 Do Logistics Outsourcing practices have an impact on company competitiveness in manufacturing organizations in Sri Lanka?

The first research question addressed the impact of LO practices on company competitiveness. The results elaborated that LO practices were associated with increased company competitiveness.

In order to maximize the benefits of LO on a company's competitiveness, it is essential to take important strategic factors into account. Choosing a strategic partner is essential to this process. Prospective partners must be carefully assessed by businesses to make sure their skills, beliefs, and operating philosophies align with the organization's strategic objectives. Competitiveness can be boosted by a symbiotic partnership with a partner whose strengths balance the company's shortcomings. Integration of technology is also crucial. Modern logistics management systems and real-time tracking tools improve supply chain visibility and operational effectiveness. Businesses can increase their competitive edge by using technology to reduce risks, expedite logistics procedures, and react quickly to shifting market conditions.

This is in line with the findings of earlier research (Green et al., 2008; Olah et al., 2018), which revealed that outsourcing gives businesses the chance to acquire complementary knowledge from other outside businesses, enhancing operational flexibility, cutting lead times, and improving delivery timeliness—especially within a reasonable time frame. In particular, the findings are consistent with those of Zailani et al. (2017), who found that one of the main drivers of LO by Malaysian businesses is the ability to respond quickly to client needs and reduce lead times. The current outcome shows that Ghanaian businesses can reduce the complexity involved in satisfying client needs and enhance their delivery timeliness by considering LO as a feasible option. Kiliç et al. (2016) provided additional evidence for the outcome, indicating that outsourcing helps large industrial enterprises in Turkey's Marmara region become leaner, save resources, and lower unit costs. The outcome, however, contradicts the findings of Villani and Greco's (2018) study, which found that companies in northern Italy who outsourced due to opportunistic behavior typically experienced unfavorable cost consequences.

4.2.2 Do Logistics Outsourcing practices have an impact on time-based competitiveness in manufacturing organizations in Sri Lanka?

Logistics Outsourcing indeed has a major and advantageous effect on time-based competitiveness, which is an essential component of organizational success. Companies should concentrate on a few crucial tactics in order to effectively benefit from this edge. First and foremost, supply chain process optimization is crucial. Organizations can reduce lead times and improve responsiveness to customer demands by optimizing transportation, warehousing, and inventory management through the utilization of logistics partners' knowledge. It's also critical to embrace

innovation. By implementing state-of-the-art technologies like automated routing algorithms, predictive analytics, and IoT-enabled tracking systems, businesses can enhance their competitiveness in time-sensitive markets by proactively identifying bottlenecks, optimizing delivery routes, and expediting order fulfillment. Furthermore, it is essential to cultivate cooperative partnerships throughout the supply chain ecosystem. Companies may exchange data, align goals, and co-create value by collaborating closely with logistics providers, suppliers, and distributors. This allows for quicker decision-making and more flexible reactions to market variations. Organizations can fully utilize LO to obtain a competitive edge that will last in the fast-paced commercial world of today by adopting these methods.

This aligns with earlier research (Green et al., 2008; Olah et al., 2018) which revealed that outsourcing gives businesses the chance to acquire complementary skills from other outside companies, which helps to improve operational flexibility, reduce lead times, and improve delivery timeliness, particularly within a reasonable time frame. Our findings are particularly consistent with those of Zailani et al. (2017), who found that one of the main drivers of LO by Malaysian businesses is the ability to respond quickly to client needs and reduce lead times. The current result suggests that, by adopting LO as a viable option, Ghanaian enterprises can condense the difficulties linked to meeting client requests and increase their delivery timelines. This usually has a significant positive impact on TBC. The fact that Ghana's logistics industry is booming, particularly with the entry of increasingly

capable third-party logistics companies, is another explanation for this outcome. As a result, businesses are utilizing the services provided by these third-party logistics companies to satisfy client demands more quickly and easily.

4.2.3 Do Logistics Outsourcing practices have an impact on cost-based competitiveness in manufacturing organizations in Sri Lanka?

Outsourcing logistics has a significant and positive impact on cost-based competitiveness, which is a critical component of organizational success. To properly leverage this influence, businesses should put in place several strategic initiatives. First and foremost, supply chain efficiency optimization is crucial. Organizations can lower total logistics costs by decreasing inventory holding costs, streamlining transportation routes, and consolidating shipments by collaborating with skilled logistics suppliers. Accepting technological advancement is also crucial. By utilizing cutting-edge technologies like route optimization software, warehouse management systems (WMS), and transportation management systems (TMS), businesses may save costs, improve operational effectiveness, and minimize inefficiencies across the supply chain. It is also essential to cultivate cooperative relationships with service providers and partners in logistics. Through fostering partnerships based on trust and transparency, businesses may secure advantageous pricing terms, take advantage of economies of scale, and uncover potential for cost savings along the whole value chain. It's also critical to create strong

performance metrics and continuous improvement programs. Organizations can find inefficiencies in their costs, address the underlying reasons, and eventually achieve lasting cost savings by conducting process audits and routinely monitoring key performance indicators (KPIs). Businesses can use the transformative potential of LO to improve their cost-based competitiveness and attain long-term financial viability in the fast-paced business environment of today by adopting these strategic imperatives.

This outcome is consistent with Wang et al. (2017)'s findings, which showed that Australian businesses use LO techniques to lower their production costs. Kiliç et al. (2016) provided additional evidence for the outcome, indicating that outsourcing allows large industrial companies in Turkey's Marmara region to become leaner, save resources, and lower unit costs. Our findings, however, run opposed to those of Villani & Greco (2018), who found that companies in northern Italy who outsourced due to opportunistic behavior frequently experienced unfavorable cost consequences. In comparison, the conclusion implies that Ghanaian enterprises are effectively increasing their cost-based competitive position.

5. CONCLUSION

5.1 Summary of the Findings

This study makes a special contribution to the company competitiveness literature as it provides a clearer understanding of the impact of LO and company competitiveness.

A wide variety of industries engaged in the manufacture of goods are included in the manufacturing sector. It's the backbone of economies all across the world, generating jobs and a sizable GDP contribution. The manufacturing industry is essential to providing goods for both consumption and future production, ranging from electronics to cars, textiles to medications. To turn raw resources into completed commodities that are ready for sale, a combination of human labor, machinery, and technology is frequently used. However, as automation, digitization, and sustainable practices improve, the industrial landscape changes, impacting environmental impact, cost-effectiveness, and efficiency.

LO practices are used by most manufacturing organizations intentionally or non-intentionally. However, some organizations in Sri Lanka do not focus on LO practices. LO practices are a contributing factor to company competitiveness whereas, LO contributes to enhancing company competitiveness in organizations as well. Therefore, the impact of LO on the company competitiveness of the manufacturing sector is fundamentally important for facing emerging challenges and contributing immensely to the Sri Lankan economy.

Several previous studies have been conducted and have looked into these dimensions, however, it is believed that this study will enrich the existing literature by filling a gap concerning some disagreements identified in previous investigations, not only regarding the ambiguity of the findings but also concerning the different interpretations of the concepts studied. This research had the particularity to analyze the dimensions in

various forms, that is, concerning the LO it was considered transportation management outsourcing and warehouse management outsourcing. Regarding company competitiveness, this research analyzed this dimension through two different perspectives, namely, time-based competitiveness and cost-based competitiveness.

To achieve better company competitiveness, this study recommends that improvement in the adoption of LO practices because they have been implemented to a moderate extent in manufacturing organizations in Sri Lanka.

The significant and positive impact that LO has on time-based competitiveness emphasizes how important it is for firms to be operationally efficient and flexible. Businesses should give priority to lean principles, continuous process improvement, and resource allocation flexibility in order to effectively capitalize on this influence. Using lean concepts, such as waste reduction programs and just-in-time inventory management, helps optimize processes and cut down on needless delays. Additionally, encouraging a culture of continuous improvement gives staff members the ability to spot inefficiencies, come up with creative fixes, and promote organizational agility. Enhancing employee training programs and providing incentives for process innovation can help a business become more competitive by enabling it to react quickly to changes in the market.

Moreover, the beneficial impact of LO on cost-based competitiveness emphasizes the importance of value optimization and strategic cost management. Businesses can

take advantage of this by putting cost-cutting measures into place, negotiating advantageous supplier contracts, and streamlining manufacturing procedures to cut down on overhead. Adopting sustainable practices improves business reputation and brand value in addition to saving money. Examples of these practices include waste reduction initiatives and energy efficiency measures. Furthermore, utilizing economies of scale via joint ventures, outsourcing agreements, or strategic partnerships can lower procurement costs and raise overall cost competitiveness.

In a nutshell, the results indicate that LO is essential for improving an organization's time- and cost-based competitiveness. Businesses may fully utilize LO and cement their place in the market by adopting technology-driven solutions, encouraging a continuous improvement culture, and putting smart cost management measures into place. In today's changing business environment, these suggestions offer firms practical insights to enhance their competitive position and promote sustainable growth.

5.2 Implications of the Study

5.2.1 Managerial Implications

The study offers management implications for managers operating in Sri Lanka and comparable environments. The study offers enough proof to encourage managers to focus on LO as a major push to increase CBC and TBC and enhance CC. In particular, managers can rely on outsourcing decisions and leverage the expertise of logistics service providers (external firms) to

achieve financial success by meeting customer demands quickly and reducing operational costs, rather than creating specific specialized logistics functions within a firm's hierarchy. Managers can therefore use LO as a perfect launching pad to strengthen their competitive positions (TBC and CBC) and advance their companies' financial standing. Managers should use caution while making judgments on outsourcing, rather than acting haphazardly. Thus, managers are urged to carefully evaluate the reliability and experience of outside companies before outsourcing any of their logistical tasks.

5.2.2 Theoretical Implications

The results of the study have implications for theory regarding how LO functions in company management. Their emphasis on LO as a strategic approach to improve cost competitiveness and customer and overall business contributions adds to the body of current literature. Furthermore, the research highlights the significance of considering both immediate and long-term viewpoints while assessing the performance results of LO. The results further clarify the need of training programs and government support in promoting successful LO implementation. All things considered, the study deepens our theoretical understanding of how LO affects corporate performance and emphasizes the challenges of managing it strategically.

5.2.3 Practical Implications

Businesses planning to participate in LO are advised not to anticipate automatic or immediate financial gains and instead to conduct a thorough cost-benefit analysis

based on company-specific characteristics before making an outsourcing choice. In this regard, when it comes to the expectation of performance outcomes, managers are encouraged to approach LO with a long-term perspective or longitudinal benefits outlook. Furthermore, the findings imply that managers and company executives should take TBC into account while making decisions on LO in order to promptly adapt to client requests and market conditions, in addition to focusing on CBC objectives when depending on specialist businesses. Furthermore, the study's findings provide crucial information for governments making decisions about how to foster a business-friendly environment and regulations that support outsourcing, thereby encouraging companies to effectively use outsourcing as a potential business solution to boost their competitiveness and achieve better performance outcomes. Lastly, given the early stages of outsourcing in Sri Lankan manufacturing companies, it is especially encouraging that government organizations in charge of enterprise development and private company development groups are taking an active part. It is specifically recommended that these significant economic decision-makers—government organizations and private business development associations—increase the LO training provided to Ghanaian companies. The training should concentrate on outlining the main benefits of implementing outsourcing methods, particularly the possible performance increases and improved TBC and CBC that this study revealed. This will assist managers in creating business models that may

transform outsourcing into a game-changing strategy meant to improve the performance and competitiveness of the organization.

5.3 Directions for Future Research

Future research would improve by eliminating below mentioned points under the topic of limitations. Therefore, future research could further investigate the impact of LO practices on company competitiveness in Sri Lanka, which is the hub of the country's manufacturing industry. Therefore, a broad Sri Lanka survey can be carried out. Specifically, it would be valuable to explore the extent to which more LO practices, such as Inventory Management Outsourcing, can be used to optimize company competitiveness in the manufacturing industry. Moreover, one thing is using larger sample, since more respondents lead to a more accurate result.

5.4 Limitations of the Study

The total number of respondents in this study was 104 which is not very large sample since the few numbers of organizations practicing LO and it was very difficult to identify those organizations. Therefore, getting a comparatively large sample would ensure better findings.

The main advantage of the data collection quiz system is its main disadvantage. Because the selection is limited to a set of multiple-choice questions, some possible answers may be hidden, and another limitation is that when collecting data through a self-administered system, various responses may be erroneous and distort the real situation.

Another main limitation is company competitiveness is not measured by numerical analysis but has used the perceptions of leaders which sometimes lead to getting biased answers from the respondent as they are directly responsible for company competitiveness. Only two types of LO were considered in this study based on past literature but there are many more LO practices. Since this study was conducted only in the Sri Lankan context, it is problematic to draw a general conclusion about the effect of LO to company competitiveness, for that have to consider global manufacturing organizations.

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Recent Developments and Trends in Service Management Research and Practice

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ABSTRACT

This document gives formatting instructions for authors to prepare papers for publication in the Proceedings of the International Conference on Business Innovation – ICOBI 2023. You can use this document either as a set of instructions or as a template into which you can type your own text directly. The template has adopted the main good practices used in scientific publications. The abstract should not exceed 300 words, with no indentation.

***Keywords* - Minimum 3 keywords, No indentation.**

1. INTRODUCTION

1.1 Service Sector in an Economy

Services is the largest sector in global economies contributing 61.7% of GDP of the world and 56.1 % of the GDP of Sri Lanka in 2022 (World Bank, 2024, Central Bank of Sri Lanka, 2024).

Services include government services (including social services, judicial services, military, fire and police services, waste disposal services etc.); educational services (e.g., universities); banking, insurance, and financial services; transportation services such as public and private bus services; information related services such as libraries; repair services; hotels and restaurants; internet services, and professional services like consulting and legal services (Gunawardane, 2017).

Largest service sector subsectors in Sri Lanka are public services, wholesale and retail trade, transportation; information and communication; financial/insurance; and professional and personal services. Tourism's contribution to GDP is small (4.3%) but is important as a key foreign exchange earner (Central Bank of Sri Lanka, 2024; Gunawardane, 2017 Chapter 1). Hence, management, education and research of services is of paramount importance, especially in developing countries like Sri Lanka.

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1.2 Importance of Improving the Service Sector in Sri Lanka

There are several reasons for improving the management of services in Sri Lanka. These include (Gunawardane, 2017):

- Promotion of foreign investment. Foreign investors and businesses need highly efficient financial, communication, information technology and other business services.

- Outsourcing services. To increase Sri Lanka's capability for becoming an attractive country for outsourcing services. The accounting and information processing sectors of the country has already sensed this and have begun formulating strategies.

- Tourism: for business as well as tourist visitors, the need to improve sectors of the service industry such as tourism, travel, hotels and other hospitality services, communications, and information systems that directly affect the satisfaction of the individual tourist visitors to Sri Lanka.

- The public sector in Sri Lanka provides a huge proportion of services both to local consumers and visitors. The need to make these services more productive and efficient is imperative. This also leads to a desired political result – increased satisfaction and confidence of the consumer-voter of the government in power.

- Competition in private sector services: Customers now have a wider choice in selecting many types of services. This is already evident in the customer service emphasis in the highly competitive local wireless and internet service provider market.

- The need to improve transportation, communications, logistics and information services for improving internal operations of business firms and inter-firm operations. Efficient internal operations of businesses and inter-firm operations are essential for the economic development of the country.

1.3 Importance of Studying Trends in Service Management Research and Practice

Every academic discipline should periodically reflect on its past, assess its boundaries and think about its future to legitimize its existence and advance the discipline (Furer et al., 2020). Identification of scientific trends and fronts is an attempt to search for new growth points, the most promising ideas and developments that are important for the further development of science and technology (Mazo et al., 2020). This is true for service management as well. Literature shows several periodic reviews of service management research. These are discussed in Section 2.

However, the academic literature in the field of Management is often criticized because of its little relevance to the professional community (Frutos-Belizón et al. 2021). Considering this, periodic reviews of priority areas in service management practice are also important.

1.4 Objectives of this Paper. Research Questions

Considering the above premises, this paper aims to address the following research questions:

R1: What are the themes and topics in service management research in top rated service management journals, during the last five years 2020-2024?

R2: Is there a change in focus of this research from the previous two decades, 1998-2019?

R3: What are the current themes and topics of interest to service management practitioners and how do they compare with research directions?

2. LITERATURE REVIEW

Even by 1970, U.S. universities taught only Production Management (PM) based on manufacturing operations. By mid-1970's efforts were made to use techniques in PM to service operations. Examples were "Production Line Approach to Services" (Levitt, 1972) and ''The Industrialization of Services'' (Levitt, 1976).

The 1980's saw articles on service management written by both operations and marketing scholars. Service quality and customer satisfaction became topics of interest. Parasuraman et al. (1985 and 1988) introduced the dissonance theory of customer satisfaction in services and the SERVQUAL method of measuring service quality. Study of management of services in US universities also began in the 1980s.

1990s and 2000s saw service management establishing as its own discipline. Journals in Service Management (Journal of Service Management and Journal of Service Research) also appeared. The focus turned to service as a strategy and value creation by services (Gronroos, 2000; Edvardsson, Gustafsson, and Roos 2005; Vargo and Lusch, 2016). Emerging issues in the mid years of 2000s were Customer Experience (CX), Customer Journey, Customer Engagement (CE), Customer Relationships Management (CRM), Technology Enabled Services, and Customer Focused Employees.

Like in other academic fields, service management also has had periodic surveys of direction of its research (Furrer et al. 2020.). Among reviews of past service research and look ahead include:

- Fisk et al. (1993): Content analysis of published research. General marketing literature. 1127 sources as of November 1992.Early ''marketing services is different'' focus to ''service encounters; service quality'' focus.
- Furrer and Sollberger (2007): Content analysis of published research in service marketing literature 1993–2003. Found a shift in emphasis to consumer behaviors/behavioral intentions, service design, service quality, strategy, customer satisfaction and service employee management.
- Kunz and Hogreve, (2011). Citation based approach, Covers 1992–2009. Shows that main topics have changed their research orientations over time. For example, the literature on online service & technology infusion reveals an increasingly operational and customer-focused orientation. Opions

that managing business-to-business services, complaint handling & service recovery, and enhancing and managing the service value chain are promising topics.

- Ostrom et al., (2010). Expert researcher-practitioner opinions. Global, interdisciplinary research priorities focused on the science of service. Identified as priorities: Fostering service infusion and growth; Improving well-being through transformative service; Creating and maintaining a service culture; Stimulating service innovation; Enhancing service design; Optimizing service networks and value chains; Effectively branding and selling services; Enhancing the service experience through cocreation; Measuring and optimizing the value of service; and Leveraging technology to advance service.

- Nel et al. (2011). Content Analysis of published research in the Journal of Services Marketing during the period 1998-2008. A total of 417 papers. Most papers are related to service quality and customer service.

- Ostrom et al., (2015), Expert researcher opinion. Priority areas: stimulating service innovation; facilitating servitization; understanding organization and employee issues; developing service networks and systems; service design; using big data to advance service; understanding value creation; enhancing the service experience; improving well-being through transformative service; measuring and optimizing service

performance; understanding service in a global context; and leveraging technology to advance service.

- Viglia et al. (2022). Content Analysis of published research in The Service Industries Journal. 1981 to 2020. Most recent focus: Service innovation; AI in services; Technology adoption; Customer experience; Online services.

- Edvardsson, B. and Tronvoll, B. (2022). Expert opinions. Draws heavily from Service-Dominant (S-D) logic, digitalization, and value cocreation.

- Chase and Apte (2007). Discussion on a chronology of major issues in service management 1950s to 2000.

- Furrer et al. (2020). Content analysis of published service research articles published in ten major academic journals (Journal of Services Marketing (JSM), Journal of Service Research (JSR), Journal of Service Management (formerly International Journal of Service Industry Management; JoSM), Journal of Marketing (JM), Journal of Marketing Research (JMR), Journal of Consumer Research (JCR), Journal of Retailing (JR), Journal of the Academy of Marketing Science (JAMS), Marketing Science (MS) and International Journal of Research in Marketing (IJRM). 2011-2019 trends: Service dominant logic; Innovation; Technology/e-service; Relationship marketing; Service encounters; Employees; Consumer behaviors; Communication; Performance; Customer satisfaction; Service quality.

- Ostrom et al. (2021). Expert opinions. surveys of service scholars and practitioners, web scraping of online

documents, a review of published service scholarship. Priorities for the future: technology and the changing nature of work, technology and the customer experience; resource and capability constraints and customer proactivity for well-being.

- Bowen et al. (2023). Expert opinions. General advice for researchers. E.g., Stay involved with stakeholders. Connect with scholars across disciplines and around the world. Deeply know the existing literature.

- Donthu et al. (2022). Content analysis of published articles in Journal of Service Research between 1998 and 2019. Prominent topics and tracks: Customer satisfaction, service recovery, service quality, big data, value cocreation, service design, and customer participation.

- Wetzels et al. (2023). Content analysis of published articles in Journal of Service Research 1998 – 2022. Identifies declining themes: service design, service quality. Emerging themes: Digital service technologies, value cocreation, service sales interface; Stable themes: Frontline employees, innovations ethics/CSR, eco systems, performance.

The following inferences can be made from the above literature review:

1. From time to time, reviews of research in service management have been undertaken to determine research directions and priorities.

2. Some of these reviews surveyed articles published in only one journal. E.g., Donthu et al. (2022) and Wetzels et al, (2023) only surveyed articles in Journal of Service Research (JSR). Nel et al. (2011) only surveyed articles in the Journal of Services Marketing. Viglia et al. (2022) only surveyed articles in The Service Industries Journal. In contrast, our study covers articles published in all three major service management journals.

3. Most previous surveys covered research up to 2019 (Donthu et al., 2022; Furrer et al., 2020). Our work will extend these studies to current times, 2020-2024.

4. The most common methodology used for such reviews has been content analysis of published research.

3. METHODOLOGY

We adopted the most commonly used methodology for reviews of past research as seen in the earlier section, namely content analysis of published research.

We examined all articles published in the three top ranked journals in service management, namely Journal of Service Research (JSR: SJR 4.948 H index 148), Journal of Service Management (JSM: SJR 2.167 H index 88), and Service Industries Journal (SIJ: SJR 2.268 H index 85).

SJR (The SCImago Journal Rank) indicator is a measure of the prestige of scholarly journals that accounts for both the number of citations received by a journal and the prestige of the journals where the citations come from. For example, Journal of Retailing where pioneering and many other articles on service quality by Parasuraman and colleagues were published has a SJR of 3.915. Other examples: Asia Pacific Journal of Management 1.640; Harvard Business Review 0.426; British Journal of

Management 2.265; and Decision Sciences 2.145.

We classified all articles published in these journals, JSR (18 issues; 142 articles), JSM: 18 issues; 162 articles) and SIJ (32 issues; 191 articles) during years 2020 – 2024. To classify, we used themes in the classification adopted by Donthu et al. (2020) who classified articles published in JSR between 1998 and 2019.

Classification was done by examining the title and abstract of each article by a recognized scholar in the field who also has over 25 years of experience as an executive in the US service industry, and an experienced service manager in the hospitality and restaurant industry who has

an MBA. The few conflicts between these two persons were resolved by a third person, a service manager with a MS degree in service management.

4. FINDINGS AND DISCUSSION

4.1.Themes of Articles in Top Three Service Management Journals 2020-2024

These are summarized in Table 1. Overlapping of issues among themes was unavoidable. For example, what one author calls "service performance"' might be called ''service quality' 'by another. Also, we combined articles on related issues, e.g., AI, technology, digital services.

Table 1 Distribution of Articles in JSR, JSM and SIJ by Theme 2020- 2024

THEME	JSR Articles	JSM Articles	SIJ Articles	Total (Rank)
Front Line Employees Issues, Service Employee Management	24	26	28	78 (2)
Technology/AI/Robots/Self Service Tech./ Digital Services	22	43	28	94 (1)
Service Design/Innovation	15	15	10	40 (5)
Customer Relations Management (CRM) Customer Engagement (CE)/Communications	13	25	12	50 (4)
Customer/Consumer Behavior Issues	11	4	37	52 (3)
Sustainable Services/CSR	8	2	13	23 (6)

Customer Experience	7	10	2	19 (8)
Health Care Services	7	6	5	18 (9)
Services – Sales Interactions	6			6
Co-creation	4	5	3	12 (10)
Services Marketing incl. Pricing	9	4	8	21 (7)
Service Failure/Recovery	4	2	2	8
Hospitality/Travel/Tourism			6	6
Global/Offshore Services	2		8	10 (8)
Servitisation		2	2	4
Service Evaluation/Service Quality		2	4	6
Service Supply Chain Management		3	5	8
Complaints Management	3			3
Misc: COVID 19 crisis management			12	12
Misc: Research Directions	6	4	3	13
Misc: Expert Services	1	1	1	3
Misc: Sports Management		5		5
Misc: Other		3	4	7
Total	142	162	191	495

5. DISCUSSIONS

A comparison of themes identified in our study for period 2020-2024 and those identified in selected studies up to 2019 are shown in Table 2 below.

Table 2. A Comparison of Themes Identified in Our Study 2020-2024 and in Studies Up To 2019

Our Study JSR, JSM and SIJ 2020-2024 In Rank Order	Donthu et al. (2022) JSR 1998 – 2019 in Rank Order	Furrer et al. (2020) 10 Management/Marketing

		Journals. 2011 – 2019 in Rank Order
1. Technology/AI/Robots/Digitally enhanced services	1. Customer Satisfaction	1. Consumer Behavior
2. Front Line Employees Issues, Service Employee Management	2. Customer Loyalty	2. Relationship Marketing
3. Customer/Consumer Behavior Issues	3. Service Recovery	3. Service Employees
4. Customer Relations Management (CRM)/Customer Engagement (CE)/Communications	4. Service Quality	4. Customer Satisfaction
5. Service Design/Innovation	4. Service Failure	5.Technology/E-service
6. Sustainable Services/CSR	6. Frontline Employees	6. Performance
7. Services Marketing	7. Relationship Marketing	7. Service Encounters
8. Global/Offshore Services	8. Service Marketing	8.Methodology/Theory
9. Health Care Services	9. Service Innovation	9. Service Dominant Logic
10. Cocreation	10. Cocreation	10. Emotions

Our notable observations are as follows:

- Customer satisfaction (CS) is, and will remain, the foremost concept in services. However, during the last five years, researchers seem to focus on areas contributing to CS going deeper into analyzing these areas. E.g., customer/consumer behavior, service orientation of service employees. Hence the absence of the term CS itself as a priority area of research. Also, Customer Experience (CX) is now recognized as the real measure of customer satisfaction leading to customer buying behavior.

- Research areas of most interest currently are:

  - Number 1 in our survey 2020-2024: Technology/AI/Robots/Digitally Enhanced Services. Technology was number 5 in Fuhrer et al (2020). Significant increase in current research interest.

- Number 2 in our survey 2020-2024: Front Line Employees Issues, Service Employee Management This topic was number 3 in Fuhrer et al. (2020) and number 6 in Donthu et al.

- Number 3 in our survey 2020-2024: Customer/consumer behavior, relations management (combined). This topic was number one in Fuhrer et al., 2020 and number 7 in Donthu et al., 2022). Maintains stable level of research interest.

- Number 5 in our survey 2020-2024: Service innovation/design. This issue was numbers 7 and 9 in Furrer et al, (2020) and number 9 in Donthu et al. 2022). Significant increase in current research interest.

- Simply looking at themes defined by us, or by the other scholars is misleading as there are several overlaps between themes and sub areas. Two such overlaps must be highlighted.

  - Technology/AI/Robots/Digitally Enhanced Services and Service Innovation are highly related. Researchers seem to have recognized that successful service innovation is most important but will come from digitally enhanced services and a deeper understanding of customer behavior/co-creation issues.

  - Also recognized by researchers is the overlap between customer oriented front-line employees, and the concept of cocreation to which customer brings emotions and other behaviors, all of which are critical in service innovation and design.

6. CONCLUSIONS

Service innovation/design is in the forefront of service research and researchers seem to have recognized that successful service innovation will come from digitally enhanced services and a deeper understanding of customer behavior/co-creation issues and service employee issues. JSM devoted an entire special issue in 2024 (Volume 35, Issue 2) on Digital Service Innovation (DSI).

This insight is very important in Sri Lanka where technologies such as AI are treated as technologies alone with little acceptance that such technologies, e.g., chatbots, will be effective if they are related to customer acceptance and employee motivation. Our observation of research on services in Sri Lanka is that they are based on the somewhat archaic five dimensions of customer satisfaction with hardly any recognition of customer experience. We recommend research in Sri Lanka to focus on modern priorities identified in this paper, namely service innovation, digitally enhanced services, customer experience, role of service employees in enhancing customer experience, and a deep understanding of service customer behavior, and co-creation. Although cultural differences will certainly affect customer behavior, employee issues and factors affecting service innovation, the concepts themselves are applicable globally.

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Factors Associates with Employee Burnout Among Machine Operators: A Study of Tea Industry, Galle District, Sri Lanka

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ABSTRACT

Burnout is a prevalent issue among machine operators in tea factories, yet the factors contributing to this problem are not well-documented. This study aims to determine the impact of workload, work-family conflict and occupational stress on employee burnout among machine operators in the Galle District, Sri Lanka. A total of 240 machine operators were selected using the convenience sampling method and 228 respondents provided data through questionnaires.The questionnaires collected information on workload, work-family conflict, occupational stress and burnout, and data were analyzed using SPSS software and Microsoft Excel. The analysis indicated that workload and occupational stress were significant predictors of burnout among machine operators, while work-family conflict was not a reliable predictor. Increased workload and higher levels of occupational stress were associated with elevated burnout levels. Conversely, the lack of significant impact from work-family conflict suggests that job-related factors are more critical in contributing to burnout in this context. The findings emphasize the importance of addressing workload and stress management to mitigate burnout as machine operators in tea factories experience high levels of burnout primarily due to excessive workload and occupational stress. Interventions focused on reducing workload and improving stress management are essential for diminishing burnout levels. Future research should explore additional variables influencing burnout and further investigate the role of work-family conflict. This study provides essential insights into the factors affecting burnout in tea factory machine operators by highlighting the need for targeted strategies to enhance employee well-being and productivity.

***Keywords* - Employee Burnout, Machine Operators, Occupational Stress, Work-family conflict, Workload.**

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1. INTRODUCTION

Employee well-being is sometimes overlooked in the highly competitive world of today's manufacturing industries due to constant attempts at profitability. This drive for organizational success can lead to significant issues for the workforce including higher rates of employee burnout.

Burnout, a state of physical and emotional exhaustion is prevalent among machine operators in the labor-intensive industries. It results from chronic work stress and is characterized by emotional exhaustion, depersonalization and a reduced sense of personal accomplishment (Maslach et al., 2001).

An important part of Sri Lanka's economy is the tea sector, particularly in the Galle district. However, machine operators are often susceptible to burnout due to the demanding nature of the profession. Occupational stress, work-family conflict, poor leadership and an excessive workload are some of the factors that greatly contribute to this problem.

Machine operators who handle tea weathering troughs, tea blending machines, tea cutting machines, tea color separating machines, tea sieving machines, double packers, tea weighing machines, conveyor belts, double circuit dryers, etc are predominantly unskilled laborers. Their assigned tasks change daily, meaning they do not perform the same job daily. Specially, many of these operators are female workers, who often feel anxious and intimidated by the machinery. This anxiety contributes to increased stress levels and absenteeism among the workforce.

According to (Soelton et al., 2020) burnout negatively impacts an individual's performance and job satisfaction in addition to their physical and mental health resulting higher employee turnover and lower productivity. When corporate organizations emphasize their objectives without providing their employees with enough supervision and support, this situation becomes worse (Maslach et al., 2001).

The economic landscape is highly competitive which make it challenging for businesses to survive. Satisfied employees are crucial for achieving organizational goals as they tend to work harder and support the overall success of the organization. Conversely, dissatisfied employees can hinder organizational success. However, most of the tea factories in the Galle district have experienced high employee turnover specially in May and December because workers left their jobs after obtaining the bonus payment. Also higher absenteeism during peak seasons compared to off-seasons. High turnover and absenteeism indicate issues such as job dissatisfaction, unsafe working conditions or poor management. Given the increased workload during peak seasons, employees may face occupational stress which affects their job satisfaction. This stress could be a hidden factor influencing absenteeism and turnover.

Employee burnout in the tea industry is an escalating problem with significant implications for both employees and employers. Despite the critical role of machine operators in maintaining the productivity of tea factories, there is a noticeable lack of research on the factors

contributing to their burnout, particularly in the context of Sri Lanka (Smith et al., 2019). While extensive studies have been conducted on burnout in professions such as law, teaching, nursing and firefighting (Tsai et al., 2009; Reddy & Poornima, 2012; Wang et al., 2012), similar research in the tea industry remains scarce.

This population gap is concerning given the high burnout rates reported among machine operators. Therefore, this study aims to fill this gap by investigating the specific factors that contribute to burnout among machine operators in the tea industry, Galle district.

Based on the background of the problem outlined above, the research questions of this study are as follows.

RQ 1 - What are the primary factors contributing to burnout among machine operators in the tea industry in the Galle District?

RQ 2 - How do workload, work-family conflict and occupational stress influence the levels of burnout among machine operators?

RQ 3 - What strategies can be implemented to reduce burnout and improve job satisfaction among machine operators in this sector?

The outcomes of this study will benefit multiple stakeholders including machine operators, tea factory owners, researchers and policymakers. By identifying the relationship between these factors, this study aims to suggest practical improvements that can help minimize burnout.

2. LITERATURE REVIEW SUMMARY

2.1 Employee Burnout

Employee burnout has been extensively studied across various industries with multiple definitions and conceptualizations proposed over the years. Herbert Freudenberger was the first to introduce the term "burnout" defining it as a state of physical and emotional exhaustion caused by excessive job demands (Angerer, 2003). This concept initially focused on human services and healthcare workers which combines emotional exhaustion and loss of motivation (Angerer, 2003; Lambert et al., 2009).

Burnout can manifest in various ways including mental processes, attitudinal and emotional reactions and personal experiences. The first threshold for burnout is often feeling emotionally drained from work (Bellou & Chatzinikou, 2015). Prior research has identified several factors related to burnout including individual, organizational and demographic factors (Brewer & Shapard, 2004).

Burnout typically includes elements of emotional exhaustion, depersonalization and reduced personal accomplishment (Broome et al., 2009; Soelton et al., 2020). Prolonged stress and workplace challenges contribute to burnout which adversely affects employee performance and leads to issues like decreased productivity, increased turnover and poor emotional health (Smith et al., 2019).

Significant research has focused on the factors contributing to burnout. For instance, Smith et al. (2019) examined the impact of work pressure, perceived stress and work-family conflict on firefighter burnout which

has found positive associations with all three factors. Similarly, Lambert et al. (2009) identified that a lack of employer support can lead to burnout resulting in higher turnover, absenteeism and reduced productivity.

Burnout is also linked to a range of physical and mental health problems including cardiovascular disease, musculoskeletal pain, depression, sleep disturbances, headaches and anxiety (Wang et al., 2014). Research across various industries such as construction, manufacturing, healthcare and education has consistently shown the detrimental effects of burnout on both employees and organizational outcomes (Rowlinson & Koh, 2014; Tsai et al., 2009; Wang et al., 2012).

Burnout is a pervasive issue where effective management of job factors contributing to it and organizational support can significantly reduce burnout and its associated negative impacts (Yang & Fry, 2018).

2.2 Workload

One critical factor contributing to burnout is workload, which encompasses the amount and intensity of work assigned to employees. In any organization, the workload is divided among workers according to the standards of the organization. However, deviations from these standards can result in an excessive workload which leads to burnout (Soelton et al., 2020).

Workload significantly impacts both job performance and employee health. Turpin et al. (2021) identified that high workload negatively affects job performance and worker health leading to increased burnout

and turnover which contribute to higher organizational costs. Similarly, studies in the construction industry reported a 33% burnout rate among workers due to excessive workload (Rowlinson & Koh, 2014).

Burnout not only affects performance but also leads to severe health issues. Wang et al. (2014) found that burnout contributes to physical diseases and mental health problems such as cardiovascular disease, musculoskeletal pain, depression, sleep disturbances and anxiety. These findings are consistent among different industries including healthcare, education and manufacturing (Koharuddin et al., 2021; Enshassi, 2015).

2.2.1 Workload and Employee Burnout

Research has consistently shown a positive relationship between workload and employee burnout where the studies on teachers have highlighted numerous stressors including lesson planning, organizing activities and curriculum development which contribute to high levels of burnout (Jomuad et al., 2021). Similarly, Soelton et al. (2020) found that increased workload positively correlates with employee burnout which defines workload as the amount of work required by a particular role or organization where job demand exceeds employees' capabilities, they experience fatigue and burnout.

In the administrative sector, Ziaei et al. (2015) reported that workload is significantly related to employee burnout, although it does not vary significantly with age, work experience, educational level or gender. Burnout in this context is associated

with job dissatisfaction and increased physical demands particularly among women.

Studies in the medical field have also demonstrated a strong link between physician workload and burnout highlighting various models of this relationship (Watson et al., 2019). Wen et al. (2016) measured doctors' workload by working hours per week and the number of patients seen daily by finding significant associations with burnout. Additionally, a high workload has been linked to negative outcomes such as anxiety, frustration and stress.

2.3 Occupational Stress

Occupational stress is a significant factor that impacts both the emotional and physical well-being of employees. This stress arises when job demands exceed an individual's capacity to cope which leads to various negative health outcomes. As the nature of work shifts from production industries to service industries, the understanding of occupational stress has evolved. Two primary models used to conceptualize occupational stress are the Demand-Control-Support (DCS) model and the Effort-Reward Imbalance (ERI) model (Tsai et al., 2009).

According to Colligan et al. (2006), occupational stress is the psychological strain experienced by employees due to their organizational roles. Smith et al. (2019) further discuss occupational stress in the context of workplace safety by highlighting the pressure employees feel to meet deadlines and resource constraints. This type of stress is linked to various health issues

including heart disease, hypertension, cancer, psychosomatic symptoms and musculoskeletal disorders. Khan Khattak et al. (2011) add that occupational stress not only affects the individual but also the work environment leading to detrimental effects on overall organizational health.

2.3.1 Theories of Occupational Stress

Theories of occupational stress are essential for understanding human behaviour specially within work environments. One such theory, the Cybernetic theory originally developed to describe the functioning of self-regulating systems which provides a comprehensive, synthetic and mechanistic explanatory model making it an excellent framework for an integrative personality theory. The primary aim of the Cybernetic theory is to minimize discrepancies between environmental inputs and internal standards that serve as reference criteria (Edwards, 1992). It differentiates psychological individual differences into personality traits. This theory has been applied well in understanding stress and burnout among bank employees in Pakistan (Khan Khattak et al., 2011).

Another significant model, the Job-Demand-Control-Support (JDCS) model explains workplace stress through three components such as job demand, job control and job support (Dawson & O'Brien, 2015). Job demand pertains to quantitative aspects such as time pressure and workload while job control refers to the extent to which individuals can control their tasks and normal work activities (Häusser et al., 2014). Job support encompasses the quality of relationships between coworkers and supervisors (Dawson & O'Brien, 2015).

Research has shown that the JDCS model effectively supports the utilization of occupational stress by incorporating high psychological demand and high decision latitude (Tsai et al., 2009).

The Effort-Reward Imbalance (ERI) model is used to identify stressful psychosocial environments within society (Siegrist, 2016). This model provides a general approach to analyzing the psychosocial dimensions of human health and well-being during task performance. Self-report data measures are primarily used to assess this imbalance. The ERI model discusses the relationship between exposure to stressful social environments and adverse health outcomes, supported by experimental research evidence (Cooper & Quick, 2017).

2.3.2 Occupational Stress and Employee Burnout

Reddy & Poornima (2012) found a significant positive relationship between occupational stress and employee burnout among university teachers in South India. This study measured various dimensions of occupational stress and burnout by providing detailed insights into their interrelationships. Wang et al. (2014) demonstrated that occupational stress is positively associated with burnout among Chinese teachers using the DCS and ERI models to explore these relationships. Occupational stress is also linked to absenteeism, turnover, job dissatisfaction and reduced productivity at the organizational level.

Case studies across different sectors highlight the pervasive nature of occupational stress. (Reddy & Poornima, 2012) found that a high percentage of university teachers in Tamil Nadu and Andhra Pradesh experience moderate to high levels of occupational stress and burnout which negatively impacts job satisfaction, organizational efficiency and service quality. Khan Khattak et al. (2011) identified significant occupational stress factors contributing to burnout in Pakistan's banking sector such as workload, inadequate salary and long working hours.

The relationship between occupational stress and burnout is further evidenced in the legal profession. Tsai et al. (2009) found high levels of occupational stress among Taiwanese lawyers using the DCS and ERI models to demonstrate that occupational stress is closely linked to both personal and work-related burnout. These findings underscore the importance of understanding the factors that contribute to occupational stress to develop effective interventions.

2.4 Work-Family Conflict

Work-family conflict arises from the tensions between work obligations and family responsibilities which create inter-role conflicts where the demands of one role make fulfilling the other more difficult. According to Lambert et al. (2009), work-family conflict is defined as a form of inter-role conflict in which the pressures from work and family domains are mutually incompatible. This conflict can result in fatigue and negatively impact organizational behaviors such as absenteeism, turnover and job dissatisfaction (Soelton et al., 2020).

Research by Laeeque & Laeeque (2014) highlights that work-family conflict often stems from employees' attempts to balance

the demands and pressures of both work and family. This conflict is linked to various negative outcomes including increased stress and burnout. Smith et al. (2019) and Soelton et al. (2020) describe work-family conflict in terms of home resource depletion and role conflict emphasizing that when employees bring work-related stress into their home lives, it exacerbates their overall stress levels.

Lambert et al. (2009) further categorize work-family conflict into two primary dimensions such as work on family conflict and family-on-work conflict. Work on family conflict occurs when work demands negatively impact home life while family on work conflict arises when home issues interfere with work responsibilities.

These conflicts manifest in various forms such as time-based conflict, strain-based conflict and behavioral-based conflict. Time-based conflict occurs when the time required for work interferes with family time often leading to missed family events and increased stress. Strain-based conflict arises from the stress and demands of work affecting the quality of home life leading to tensions and conflicts within the family. Behavioral-based conflict occurs when the behaviors required in one role are incompatible with those required in the other which causes friction and stress Lambert et al. (2009).

2.4.1 Work-Family Conflict and Employee Burnout

Empirical studies have consistently demonstrated positive correlations between work-family conflict and job burnout. Amstad et al. (2011) found that heightened work-family conflict results in increased levels of burnout and diminished organizational commitment. This finding is corroborated by research conducted among correctional staff which identified a positive relationship between work-family conflict, stress and job burnout (Lambert et al., 2009).

The impact of work-family conflict on job burnout varies across different occupational groups. (Haider Ali Shah et al., 2021) conducted research among Pakistani nurses and discovered a significant association between work-family conflict and job burnout. Similarly, a study involving Chinese doctors employed scales to measure the extent to which work demands interfere with family obligations and vice versa, revealing a significant relationship with burnout (Wang, Liu, et al., 2012).

3. METHODOLOGY AND EXPERIMENTAL DESIGN

This section outlines the methodology used to investigate the factors contributing to employee burnout among machine operators in the tea industry in the Galle district. It includes details on the research design, sampling process, data collection methods and analytical techniques used in the study.

3.1 Research Design

This study employs a descriptive cross-sectional design combined with a deductive approach. The cross-sectional design provides a snapshot of the relationships between the independent and dependent variables at a specific time point (Sobol, 2013). The deductive approach involves formulating hypotheses based on existing literature and testing these hypotheses

through empirical data collection (Mkansi & Acheampong, 2012).

3.2 Conceptual Framework and Hypotheses
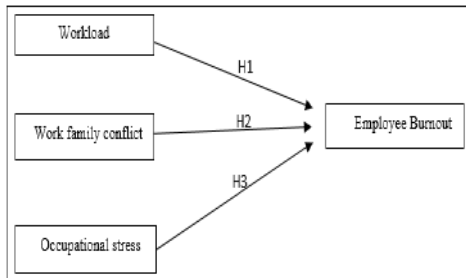
Figure 1 Conceptual framework

Based on the conceptual framework, the following hypotheses were developed:

H1: Workload has a significant relationship with employee burnout

H2: Work-family conflict has a significant relationship with employee burnout

H3: Occupational stress has a significant relationship with employee burnout.

3.3 Unit of Analysis

The target population for this study consists of machine operators in the tea industry in the Galle district, Sri Lanka. For the research 12 tea factories were selected representing 240 machine operators using a convenience sampling method.

3.4 Data Collection

Data were collected using both primary and secondary methods. Primary data were gathered through a structured questionnaire administered to machine operators in the selected tea factories. The questionnaire was designed to be easily understood with three

major sections and was translated into Sinhala.

Section A – Demographic characteristics of the machine operators such as age, marital status, the number of children and education.

Section B – Factors that are used as the independent variables among machine operators namely workload, work-family conflict and occupational Stress.

Section C – Questions to measure the exposure to burnout among machine operators in Galle district, Sri Lanka.

A five-point Likert scale was used to measure responses, ranging from "strongly disagree" (1) to "strongly agree" (5) (Kinnunen et al., n.d.; Qureshi et al., 2014; Shukla & Srivastava, 2016; Yang et al., 2021))

Secondary data were obtained from tea factory records such as attendance sheets, employee turnover rate, occupational accidents among the machine operators and departmental records.

3.5 Data Analysis

Data analysis was conducted using SPSS software which facilitated the examination of descriptive statistics, correlations, reliability of variables, multiple regression and the significance of the variables and hypothesis testing.

The internal consistency and reliability of the questionnaire were assessed using Cronbach's alpha. To measure the correlations between each independent variable and the dependent variable, the Pearson correlation method was applied. Additionally, linear regression analysis was performed to determine the significance of

the model and to assess the impact of the independent variables on the dependent variable "burnout" among machine operators in the tea industry, Galle district, Sri Lanka.

4. RESULTS AND DISCUSSION

4.1 Reliability Analysis

Table 1 presents a summary of the reliability analysis for the study variables: workload, occupational stress, work-family conflict and employee burnout. All variables demonstrate Cronbach's alpha values above the 0.7 threshold, indicating strong internal consistency. The highest reliability was observed for occupational stress (0.820), while employee burnout showed the lowest reliability among the variables (0.740). Overall, these findings confirm that the measurement items used in this study are consistent and reliable.

Table 1 Summary of Reliability Analysis

Variable	Cronbach's alpha	Conclusion
Workload	0.786	Reliable
Occupational stress	0.820	Reliable
Work-family conflict	0.748	Reliable
Employee burnout	0.740	Reliable

4.2 Correlation Analysis

Correlation analysis was conducted to examine the relationships between the study variables. The results indicated weak positive relationships between employee burnout and work-family conflict with a 0.367 Pearson correlation coefficient and it was 0.748 for workload and 0.697 for occupational stress. All the pairs of variables indicated positive associations with employee burnout. These findings suggest that increases in workload, occupational stress and work-family conflict are associated with employee burnout among machine operators in the tea industry, Galle district, Sri Lanka.

4.3 Regression and Hypotheses Testing

Multiple linear regression analysis was conducted to determine the impact of the independent variables on employee burnout.

The coefficient of determination (R squared) explains the variation of the dependent variable through the variation of the independent variables. According to the results of this study, the R squared is 0.685 which is higher than 0.5 which indicates the model fit of the model is high. Similarly, the R squared value explains that all the independent variables (workload, work-family conflict, occupational stress) together explain the dependent variable from 68.5%.

According to the table, 2 adjusted R squared is 0.681 which says that if a new variable is added to the model the predictive power decreases.

Table 2 Summary of regression

Model summary	Value
R square	0.685
Adjusted R square	0.681
Model significance	0.000

The hypotheses were tested using a significance level of 0.05. The analysis revealed that workload significantly impacts employee burnout, as indicated by a P value of 0.028, which is less than the 0.05 threshold. Similarly, work-family conflict and occupational stress were found to significantly influence employee burnout with P values of 0.001 and 0.000 respectively.

Table 3 Hypotheses results

Hypothesis	Accept/Reject
H1: workload -> employee burnout	Accept
H2: work-family conflict -> employee burnout	Accept
H3: occupational stress -> employee burnout	Accept

5. CONCLUSION

This research aimed to investigate the factors contributing to employee burnout among machine operators in the tea industry of the Galle district focusing on workload, work-family conflict and occupational stress. The study revealed several significant insights into the dynamics of burnout in this labor-intensive sector.

The findings indicate that work-family conflict does not have a statistically significant impact on employee burnout, suggesting that other factors might play a more critical role in influencing burnout. In contrast, both workload and occupational stress were found to significantly impact employee burnout. Higher levels of workload are associated with increased burnout, highlighting the need for policies and practices that support employees to reduce workload. Similarly, occupational stress leads to higher levels of burnout, emphasizing the importance of effective stress management strategies and supportive work environments.

5.1 Recommendations

Based on the findings of this research, several recommendations are proposed to mitigate employee burnout among machine operators in the tea industry.

It is crucial to make sure that the workload is manageable and appropriate. Employees can avoid burnout by having regular supervision and an appropriate task distribution plan which will allow them to perform well without experiencing unnecessary stress (Greenhaus & Beutell, 1985).

Providing robust stress management resources is also a crucial factor. Tea factories should establish programs like stress management workshops and counselling services and create a supportive work environment. These resources help employees manage occupational stress effectively by promoting overall mental health and reducing burnout (Quick & Henderson, 2016).

Even if the study did not find that work-family conflict had a significant impact, developing and promoting family-friendly policies that support work-life balance is essential. These policies such as flexible working hours, parental leave and childcare support can significantly reduce work-family conflict a contributor to employee burnout (Greenhaus & Beutell, 1985).

5.2 Limitations

There are a few drawbacks to this study that should be noted. This study only considers three factors that have an impact on machine operator burnout in the tea sector. Even if these three variables have a considerable impact on employee burnout, other factors might also be included in a more thorough analysis.

Further, only the Galle area was included in the sample size and geographic focus which might not have given a complete view of the tea industry as a whole. More time and money would be needed to increase the sample size and expand the geographic coverage to get more accurate and generalizable results.

Reliance on self-reported questionnaires raises the possibility of response biases because participants may not always give genuine or correct answers. Additionally, the employees' limited access to and knowledge of technology made it challenging to gather data online. To solve this, the questionnaire was manually translated into Sinhala and distributed, which limited the researcher to the information gathered via this technique.

5.3 Directions for Future Research

Further investigations into variables including work-life balance, job satisfaction and organizational leadership may help to provide a more complete picture of the elements that lead to employee burnout. These elements might provide more information about the principles of burnout and strategies for reducing it. Studies that follow these variables over time and

examine their long-term effects on employee burnout would be particularly valuable.

There is potential for improvement in future research incorporating extra variables and yielding more comprehensive insights. Using a mixed methods approach and broadening the research scope could also help to increase the accuracy and generalizability of the research findings.

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Impact of the Management Engagement on Implementation of the TQM In Food and Beverage Industry: Concept Paper Based on ABC Company

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ABSTRACT

This concept paper elaborates to identify the Impact of the management engagement on implementation of the TQM in food and beverage industry.The sample will be selected from the selected company (operative level employees) and the research problem is to explore the level of impact of management engagement on the TQM implementation, as per the relevant measures taken by the organizations. The convenience sampling method would be employed to get the data required for the analysis and 50 employees from selected Food and Beverage company will be selected to interview through a standard, structured questionnaire. The questionniare will be designed based on previous literature and it will cover the demographics, management engagement measures TQM implementation using a 5 point Likert scale. For the study authors will utilize SPSS software and data will be analyzed to generate a regression, as well as to identify the correlation as well as reliability and validity of the data set. These tests would be run to identify if there is a significant relationship between the rewards management measures and job satisfaction for the employees of the selected food and beverages companies.

***Keywords** - Food and Beverage, Management Engagement, Total Quality Management*

1. INTRODUCTION

The food and beverage sector includes businesses that transform raw food agricultural commodities and semi-processed food products into food and beverage goods. And it is a vast and crucial industry that includes everything involved in transporting food and beverages from farms and producers to our tables (TriStar, 2024). This industry, defined by its fast-paced environment, severe regulatory standards, and high consumer expectations, requires constant dedication to quality (Lark, 2023). Food and beverage are an important sector because it has the potential to provide

numerous benefits to the economy, such as foreign exchange services, empowering the food system from an innovation standpoint, providing a suitable source of employment, boosting the rural economy, and playing a role in the local scopes of the economy (Export Development Board (EDB), Sri Lanka, 2022).

The food and beverage industry are heavily regulated, and products supplied must comply to the safety and quality standards established for the manufacture of commodities for consumer use. Failure to adhere to these standards can lead to product recalls, reputational harm, and legal consequences. TQM is a structured approach to quality management in which all components of the manufacturing operation are engineered, executed, and inspected to satisfy the needed standards. Implementing a TQM program in a food and beverage production firm has various advantages, including improved product quality, increased efficiency, increased customer satisfaction, minimize the cost, etc. (PLANET TOGETHER, 2023)

Musran Munizu (2013) highlights the critical impact of Total Quality Management (TQM) in the food and beverage industry, emphasizing its influence on several key areas. Strong leadership within TQM improves product quality and is essential for effective quality management strategies. Strategic planning aligns quality initiatives with business objectives, ensuring systematic improvements. TQM's customer focus enhances satisfaction, loyalty, and market share by meeting consumer needs and expectations. Data-driven decision-making supports continuous improvements

and efficient problem-solving, while employee involvement and empowerment foster a culture of quality and excellence. Additionally, optimizing processes through TQM reduces waste and inefficiencies, leading to better quality outcomes and overall performance (Munizu, 2013).

Research has shown that effective management engagement significantly influences the effectiveness of TQM implementation in food and beverage companies. For instance, Soltani et al. (2005) found that organizations with high levels of management commitment to TQM experienced better performance outcomes compared to those with lower levels of engagement. Furthermore, management engagement enhanced product quality, increased customer satisfaction, and improved operational efficiency. Moreover, engaged management can create a supportive environment that encourages employee participation in quality improvement efforts, leading to a more robust and sustainable quality management system (Psomas & Fotopoulos, 2010).

ABC Company in food and beverage production, is in dire need of the study to understand the impact of the management engagement on TQM implementation to encourage the initiative in the company and enhance the quality of its products. So this study aims to fill the gap in literature for the cause of theoretical implication and enhance the production as per the managerial implication.

2. PROBLEM STATEMENT

The food and beverage industry is subject to rigorous quality standards and high

consumer expectations, making Total Quality Management (TQM) an essential strategy for achieving and maintaining quality excellence. Despite the recognized benefits of TQM, including improved product quality, customer satisfaction, and operational efficiency, many organizations in this sector struggle with its effective implementation. One critical factor influencing the success of TQM initiatives is the level of management engagement. According to tutor chase, implementing TQM would be difficult because of management's unwillingness to participate in quality improvement and the belief that only operational level staff should be held accountable for quality enhancement. Identifying these hurdles is crucial for developing successful ways to overcome them and promote a culture of quality excellence throughout the organization through the implementation of TQM.

Management engagement, defined as the active involvement and commitment of top management in TQM practices, is crucial for driving quality improvements. However, there is a significant gap in understanding how varying levels of management engagement impact the effectiveness of TQM implementation in the food and beverage industry (Akanmu et al., 2023). While some studies have highlighted the positive correlation between management involvement and TQM success, there remains a lack of comprehensive research focusing specifically on the food and beverage sector and the unique challenges it faces. Therefore this study focusses on identifying the significance of the management engagement in implementing

TQM practices in food and beverages industry.

3. SIGNIFICANCE OF THE STUDY

Most existing studies on TQM focus on general manufacturing or other industries, leaving a gap in sector-specific insights for the food and beverage industry. This industry has unique regulatory requirements and quality challenges that necessitate tailored TQM approaches (Psomas & Fotopoulos, 2010). According to the current literature, most research articles focus on employee engagement in TQM. Sanjiv Gupta, in "Total Quality Management for Employee Engagement," mentions that employer commitment to TQM has not been studied and his article only looks at the automobile manufacturing industry in India (Dr. Nilesh Arora, 2020). Similarly, Khalifa Alketbi, in "Investigating the Factors Influencing TQM Implementation on Organizations' Performance," states that employer commitment to TQM has not been explored, and his article focuses only on the government sector in the United Arab Emirates (Khalifa Alketbi, 2022). Furthermore, there is a lack of quantitative research that measures the direct impact of different levels of management engagement on TQM outcomes. While qualitative studies provide valuable insights, they often lack the statistical rigor needed to generalize findings across the industry (Akanmu et al., 2023). This study aims to gap the bridge in literature in terms of identifying the impact of management engagement in TQM practices in food and beverage industry which will in return be quite supportive to the academic field to bridge the knowledge gap as well as in terms of industrial purpose,

this will be an eye opener to come up with newer methods to increase management engagement in the implementation of TQM practices effectively. Based on findings relevant stakeholders can identify which engagement areas require more investment and which needs more attention for development.

4. OBJECTIVES

4.1 Main Objective:

To identify the impact of management engagement on TQM implementation

4.2 Sub Objectives

To identify the impact of leadership on TQM implementation

To identify the impact of continuous improvement on TQM implementation

To identify the impact of knowledge on TQM implementation

4.3 Hypotheses

H_0 : There is no significant impact of management engagement on TQM implementation.

H_1 : There is a significant impact of leadership on TQM implementation

H_2: There is a significant impact of continuous improvement on TQM implementation

H_3: There is a significant impact of knowledge on TQM implementation

5. LITERATURE REVIEW

5.1 Total Quality Management

Total Quality Management (TQM) is a management philosophy based on the principle that long-term organizational success stems from the collaborative efforts of all members, from frontline staff to senior leadership, who are committed to improving quality standards to meet customer needs and preferences (Alexander S. Gillis, 2023). It incorporates strategy, statistics and information, and effective communication to instill the quality mentality in the organization's culture and processes. These concepts are frequently seen in modern quality management systems, which originated from Total Quality Management (TQM). Fundamental principles of TQM include, Customer Focused: Quality is judged by the customer, and their satisfaction shows how well an organization is doing, more than internal measures like training or tech upgrades. Employee Involvement: For TQM to work, all employees need to actively participate. They should feel empowered and not afraid to fully commit. This means making continuous improvement a part of everyday business through high-performance work systems and self-managed teams. Process Orientation: TQM focuses on processes, where each process has steps that turn inputs into outputs. These steps are clearly defined, and their performance is regularly checked to find and fix any issues. Integrated System: Organizations should work as integrated systems with processes that connect different functions. Everyone should understand and align with the organization's vision, mission, and strategies. The system often uses frameworks like the Baldrige criteria or ISO 9000 standards to create a quality culture and meet all stakeholders' expectations. Strategic Approach: Managing quality involves a strategic and systematic

approach to achieve the organization's long-term vision and goals, making quality a part of the strategic planning process. Continuous Improvement: TQM involves ongoing efforts to improve processes, aiming to boost competitiveness and effectiveness in meeting stakeholder expectations (Kaizens). Data-Driven Decisions: Effective decision-making in TQM depends on regular data collection and analysis to improve accuracy, build agreements, and make predictions based on past data. Effective Communication: Keeping high morale and motivation across all organizational levels requires good communication strategies that focus on clear methods and timely updates during changes and daily operations. (ASQ - EXCELLENCE THROUGH QUALITY, 2024). So the literature emphasizes the importance of implementing the TQM practices in an organization.

5.2 Management Engagement

Management engagement refers to the active participation and commitment of top management in promoting and supporting TQM initiatives. This engagement includes setting quality goals, providing resources, and fostering a culture of continuous improvement. Research indicates that management engagement is a key determinant of TQM success (Psomas & Fotopoulos, 2010). Akanmu et al. (2023) emphasize that effective TQM implementation requires a proactive and supportive management team that prioritizes quality objectives and integrates them into the organizational strategy. Management's role in leading by example, promoting quality values, and engaging employees in

quality improvement activities is essential for creating a quality-centric organizational culture. Understanding what influences management engagement and how it affects organizational outcomes is really important. Key studies by scholars like Bakker and Demerouti (2007) and Kahn (1990) give us basic insights into how work engagement, including at the management level, impacts organizational health and productivity (Arnold B. Bakker, 2007) (Kahn, 1990). Chandra Hosen, in "Factors Affecting Total Quality Management Implementation in the Service Industry: A Systematic Literature Review," identified top management commitment as the most influential factor (Chandra Hosen, 2021). Management engagement refers to the active participation and commitment of top management in promoting and supporting TQM initiatives. This engagement includes setting quality goals, providing resources, and fostering a culture of continuous improvement. Research indicates that management engagement is a key determinant of TQM success (Psomas & Fotopoulos, 2010). There are many theories to measure management engagement. According to Bakker & Demerouti, the "Theory of Work Engagement" suggests that work engagement is a state of fulfillment characterized by vigor, dedication, and absorption. This theory helps us understand management engagement (Arnold B. Bakker, 2007). Bernard M. Bass's "Transformational Leadership Theory" shows how transformational leaders can inspire higher levels of commitment and performance in management roles (Bass, 1985). Akanmu et al. (2023) emphasize that effective TQM implementation requires a

proactive and supportive management team that prioritizes quality objectives and integrates them into the organizational strategy. Management's role in leading by example, promoting quality values, and engaging employees in quality improvement activities is essential for creating a quality-centric organizational culture. Research by Saks (2006) found that management engagement is significantly influenced by job characteristics, leadership behavior, and organizational support, suggesting that improving these factors could boost engagement levels (Yammarino, 1993). Several studies have explored the relationship between management engagement and TQM outcomes. For example, Psomas and Fotopoulos (2010) conducted a study on Greek food companies and found that management's active involvement in TQM practices significantly enhances quality improvement and customer satisfaction. Their research highlighted that top management's commitment to quality is crucial for overcoming challenges and achieving TQM goals. Similarly, Akanmu et al. (2023) investigated TQM practices in the Malaysian food and beverage industry and found that management engagement positively influences the sustainability of TQM initiatives. They noted that engaged management teams are better able to allocate resources, address quality issues promptly, and motivate employees to participate in quality improvement efforts.

Management engagement is crucial for any organization since it directly impacts lower level employees. According to Kahn (1990), managers' engagement affects their subordinates' engagement levels, highlighting how managerial behavior shapes the organizational climate (Kahn, 1990). Arti Chandani (2016) says that management engagement is key to keeping the workforce engaged and suggests that factors like effective management of talent, leadership, clarity of company values, policies and practices, respectful treatment of employees, pay and benefits, job satisfaction, talent recognition, and emotional factors all impact management engagement (Arti Chandani, 2016). Management engagement is critical for organizational success. It requires a multifaceted approach involving leadership development, improving organizational culture, and supportive workplace practices. According to H. Kaynak, to adopt TQM, companies must first secure top management commitment and encourage staff through quality-related training, cooperation, and engagement. This lays the foundation for further TQM activities (Kaynak, 2002). With referring to the existing studies, to measure the management engagement can use, lack of knowledge of TQM philosophy, leadership, avoiding taking risk and continuous improvement. The literature consistently highlights the critical role of management engagement in the successful implementation of TQM in the food and beverage industry. Effective management engagement leads to improved quality outcomes, enhanced customer satisfaction, and better organizational performance. However, challenges such as misalignment of goals and lack of communication can impede this engagement. By adopting strategic approaches to foster management commitment, organizations can better

leverage TQM practices to achieve sustainable quality improvements.

5.2.1 Leadership

Leadership plays a pivotal role in the successful implementation of Total Quality Management (TQM) within organizations. In the context of the food and beverage industry, leadership is a critical independent variable that can significantly influence management engagement, which in turn affects the effectiveness of TQM practices. This literature review explores the relationship between leadership and management engagement in TQM implementation, drawing on various studies, including the work of Dr. Nilesh Arora and colleagues (2020). Effective leadership is essential for fostering an environment conducive to the principles of TQM. Leadership in TQM involves not only setting a vision and goals for quality improvement but also actively participating in and supporting quality initiatives. Leaders are responsible for creating a culture that emphasizes continuous improvement, customer focus, and employee involvement (Arora & Gupta, 2020). Dr. Nilesh Arora and S. Gupta (2020) highlight that leadership commitment to TQM is critical for achieving employee engagement and overall organizational success. Their study emphasizes that leaders who demonstrate a strong commitment to quality and engage in transparent communication can effectively motivate employees to embrace TQM practices. Numerous studies have demonstrated the positive impact of leadership on TQM implementation. For example, Psomas and Fotopoulos (2010) found that in the food industry, leadership commitment is a significant predictor of TQM success. Leaders who prioritize quality management and allocate resources accordingly create an enabling environment for TQM practices to thrive. Akanmu et al. (2023) also underscore the importance of leadership in TQM. Their research in the Malaysian food and beverage sector revealed that leadership engagement directly influences the sustainability of TQM practices. Leaders who are actively involved in TQM initiatives are more likely to achieve long-term quality improvements and operational excellence.

Different leadership styles can have varying impacts on TQM implementation. Transformational leadership, characterized by inspiring and motivating employees, is particularly effective in promoting TQM. Transformational leaders encourage innovation, provide intellectual stimulation, and recognize the contributions of employees, which enhances their engagement in quality initiatives (Arora & Gupta, 2020). And transactional leadership, which focuses on routine supervision and performance-related rewards and punishments, may not be as effective in fostering a culture of continuous improvement. However, transactional leadership can still play a role in maintaining quality standards and ensuring compliance with established processes (Akanmu et al., 2023). Leadership is a critical independent variable that significantly influences management engagement in the implementation of TQM in the food and beverage industry. Effective leadership fosters a culture of continuous improvement, motivates employees, and ensures the sustainability of TQM practices. Literature

is inadequate to support the fact that to enhance leadership engagement, organizations can achieve significant improvements in quality and operational performance.

5.2.2 Continuous Improvement

Continuous improvement is a important factor of Total Quality Management (TQM) and a critical factor in enhancing organizational performance. In the food and beverage industry, continuous improvement involves the ongoing effort to improve products, services, or processes by making small, incremental improvements over time. Continuous improvement, often referred to by the Japanese term "Kaizen," involves the systematic pursuit of enhancing processes, products, and services through incremental and breakthrough improvements. It is a dynamic and iterative process that requires active engagement and commitment from all organizational levels, particularly management (Arora & Gupta, 2020). Management engagement is vital for fostering a culture of continuous improvement. Leaders play a crucial role in setting the vision, providing resources, and creating an environment that encourages and rewards improvement efforts. Arora and Gupta (2020) highlight that management's commitment to continuous improvement is essential for sustaining employee engagement and achieving long-term TQM success. Dr. Nilesh Arora and S. Gupta (2020) found that continuous improvement initiatives significantly enhance employee engagement, which is a critical factor in TQM implementation. When management actively participates in and supports continuous improvement efforts, employees

are more likely to feel valued and motivated to contribute to quality enhancement activities. This engagement leads to better collaboration, innovation, and overall performance improvements. Psomas and Fotopoulos (2010) demonstrated that continuous improvement practices positively impact organizational performance in the food industry. Their study indicated that companies with strong management commitment to continuous improvement experienced higher levels of product quality, customer satisfaction, and operational efficiency. This relationship underscores the importance of management engagement in driving continuous improvement initiatives. Akanmu et al. (2023) emphasized that management's role in fostering a culture of continuous improvement is crucial for TQM success. Leaders who actively promote and participate in continuous improvement activities help create an organizational culture that values quality and encourages employees to seek out and implement improvements. This cultural shift is essential for sustaining TQM practices and achieving longterm quality goals. Despite its benefits, implementing continuous improvement in TQM can present several challenges. One major challenge is resistance to change. Employees and managers may be hesitant to embrace continuous improvement initiatives due to fear of the unknown or concerns about increased workload. Effective communication and demonstrating the benefits of continuous improvement are crucial for overcoming this resistance (Soltani & Lai, 2005). Another challenge is sustaining continuous improvement efforts over time. Continuous improvement

requires ongoing commitment and effort from management and employees. Organizations must establish mechanisms for monitoring progress, providing feedback, and recognizing achievements to maintain momentum and ensure the sustainability of improvement initiatives (Arora & Gupta, 2020). Continuous improvement is a critical independent variable that measures management engagement in the implementation of TQM in the food and beverage industry. Effective management engagement in continuous improvement initiatives enhances employee engagement, organizational performance, and the overall success of TQM practices. By addressing challenges and implementing strategies to promote continuous improvement, organizations can achieve significant quality improvements and operational excellence.

5.2.3 Knowledge

One of the critical factors affecting the successful implementation of TQM is the engagement of management. An essential aspect of this engagement is the management's knowledge and understanding of TQM philosophy. Management's understanding of TQM principles is fundamental to effective engagement in TQM initiatives. A lack of knowledge about TQM philosophy can significantly hinder the implementation process. This lack of understanding may result in poor strategic planning, inadequate resource allocation, and ineffective leadership, all of which are detrimental to TQM success (Soltani & Lai, 2005). One of the primary reasons for the failure of TQM initiatives is the lack of commitment from

upper-level management, often stemming from insufficient knowledge of TQM principles (Soltani & Lai, 2005). When managers do not fully understand the philosophy of TQM, they are less likely to commit to its principles, leading to half-hearted implementation efforts and inadequate support for TQM practices. Management knowledge of TQM is crucial for effective strategic planning and resource allocation. Psomas and Fotopoulos (2010) found that management's understanding of TQM practices directly influences their ability to allocate resources appropriately and set realistic and achievable quality goals. Without a thorough knowledge of TQM, managers may misallocate resources, overlook critical areas for improvement, and set unachievable targets, leading to frustration and disengagement among employees. The role of management in fostering a culture of continuous improvement cannot be overstated. A lack of TQM knowledge can result in poor leadership, where managers are unable to inspire and guide their teams effectively. Akanmu et al. (2023) emphasized that management engagement is vital for cultivating a culture that values quality improvement and employee involvement. Without a deep understanding of TQM principles, managers may fail to promote a quality-centric culture, resulting in low employee morale and resistance to TQM initiatives. Soltani and Lai (2005) provided empirical evidence highlighting the challenges posed by a lack of TQM knowledge among upper-level management. Their study indicated that managers often lacked a comprehensive understanding of TQM, leading to superficial commitment

and ineffective implementation. This lack of knowledge was identified as a significant barrier to the success of TQM initiatives. Psomas and Fotopoulos (2010) found that food companies with well-informed management teams about TQM principles experienced more successful TQM implementation and better overall performance. This study underscores the importance of management education and training in TQM for achieving long-term quality improvements. The lack of knowledge of TQM philosophy is a significant barrier to effective management engagement in TQM implementation. Understanding and addressing this knowledge gap is crucial for the successful adoption of TQM practices in the food and beverage industry. By investing in education and training programs, promoting continuous learning, and providing mentorship, organizations can enhance management engagement and achieve sustainable quality improvements.

6. CONCEPTUAL FRAMEWORK

As per previous studies based on similar context the conceptual framework of the study is developed. The framework given below aims to identify the impact of the independent variables leadership, continuous improvement and knowledge on the implementation of TQM in the organizations. The conceptual framework is derived supported by the findings of Soltani (2005) and .Khalifa Alketbi (2022). Figure 01 elaborates the conceptual framework to be applied for the study.

7. METHODOLOGY

The study will be designed to test the proposed hypothesis using a structured questionnaire, with questions drawn from existing literature. The focus will be on
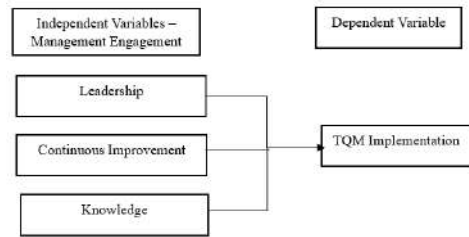
Figure 01: Conceptual framework on impact of management engagement on TQM implementation

evaluating the hypothesis and examining the correlation between the dependent and independent variables. This quantitative study aims to explain the nature of the relationship between the variables and to assess the variance of each variable based on the collected data.

Sampling: The study will involve 50 operational-level employees at ABC Company in Sri Lanka. Due to constraints in time and resources, a convenient sampling method will be employed. Data collection will be conducted using a questionnaire, with questions adapted from similar sources in the literature, specifically Soltani (2005) and Khalifa Alketbi (2022).

7.1 Measures

Part A – Demographic Information

Age
Gender
Education Level
Years of Experience
Job Position

Part B: Independent Variables

Variable	Statement
Leadership	How strongly do you agree that senior leadership actively supports TQM initiatives?
	To what extent does leadership communicate the importance of TQM to all employees?
	How often do leaders in your organization demonstrate commitment to continuous quality improvement?
	How effectively do leaders allocate resources necessary for successful TQM implementation?
	To what degree do you believe leadership's involvement has influenced the success of TQM practices?
Continuous Improvement	How regularly does your department seek out opportunities for continuous improvement in processes?
	To what extent are employees encouraged to suggest improvements to existing quality management practices?
	How effectively are continuous improvement initiatives tracked and

	measured in your organization?
	How well does your department integrate feedback from continuous improvement efforts into TQM practices?
	To what degree do you believe that a focus on continuous improvement has enhanced the implementation of TQM?
Knowledge	How well do employees in your department understand the principles of TQM?
	To what extent does your organization provide training on TQM concepts and methodologies?
	How effectively is TQM knowledge shared across different levels of the organization?
	How confident are you in the knowledge of your team regarding best practices in quality management?
	To what degree do you believe that having adequate knowledge of TQM has impacted its implementation?

Part C : Dependent Variable

Variable	Statement
Implementation of TQM	To what extent do you believe TQM practices are fully integrated into daily operations in your department?
	How effective do you find the current TQM processes in achieving consistent quality standards?
	In your experience, how well are employees trained in TQM principles and practices?
	How frequently does your department conduct audits or reviews to ensure compliance with TQM standards?
	To what degree do you believe the implementation of TQM has improved overall performance in your department?

The questionnaire is designed to cover three key areas, with questions directed at operational-level employees from the selected companies to gather the necessary data in a cross-sectional study.

Part A: This section collects demographic information such as age, gender, educational background, and occupation.

Part B: It includes 15 statements derived from previous research, targeting the independent variables. These statements are adapted to suit different work environments and will be presented to the sample during the survey.

Part C: This section features 5 statements, also developed from prior research, focused on the dependent variable. These will be included in the survey for the sample to respond to.

Respondents will rate the questions using a 5-point Likert scale, with 1 indicating strong disagreement and 5 indicating strong agreement.

The study will involve 50 operational-level employees from two selected food and beverages companies within ABC Company, Sri Lanka. The employees selected for the sample will be chosen randomly, with varying job titles depending on company needs. However, all participants will be from the operational staff, as their role is crucial to the production process.

7.2 Reliability and Validity

To assess the alignment of each measure with the specified terms and evaluate internal consistency, Cronbach's alpha values will be calculated. Generally, values of 0.7 or higher are considered to reflect reliable and consistent results.

7.3 Data Analysis

Statistical analysis will be conducted using both univariate and bivariate methods in SPSS to understand the correlation between the dependent and independent variables.

8. THEORETICAL AND MANAGEMENT IMPLICATIONS

The study aims to identify the impact of the management engagement on the implementation of TQM practices. The study will enhance the understanding of how management engagement specifically influences the successful implementation of TQM in the food and beverage industry. This can fill a gap in the literature by focusing on this industry, which may have unique challenges and dynamics compared to other sectors. The research could provide a conceptual framework that explains the mechanisms through which management engagement drives TQM practices. This can contribute to broader leadership theories and how they intersect with quality management in high-stakes industries. The study could offer insights into how industry-specific factors, such as regulatory requirements, market competition, and product safety concerns, influence the relationship between management engagement and TQM. This can help in developing more tailored theoretical models for the food and beverage industry. By exploring the link between management engagement and TQM implementation, the study can set the stage for empirical research that tests these relationships in various contexts, contributing to the refinement of TQM theories.

The findings can help managers in the food and beverage industry understand the critical role of their engagement in the successful implementation of TQM. This can lead to the development of more effective leadership strategies that foster a culture of quality within organizations. Managers can use the insights from the study to better align their actions and decisions with the goals of TQM. This could lead to more efficient processes, reduced waste, and higher product quality, which are essential in the competitive food and beverage market. The study may highlight specific areas where management engagement is crucial, such as communication, resource allocation, and employee involvement. This can inform the design of training and development programs that target these areas, leading to more effective TQM practices. By understanding the impact of management engagement on TQM, companies in the food and beverage industry can gain a competitive advantage. Effective implementation of TQM can lead to higher customer satisfaction, better compliance with industry standards, and a stronger market position. The research could also influence the development of internal policies that emphasize the importance of management engagement in quality initiatives. This can help in institutionalizing quality management practices across the organization, leading to long-term sustainability and success.

9. LIMITATIONS AND FUTURE RESEARCH

The study is based on a single company within the food and beverage industry, which may limit the generalizability of the findings to other companies or industries. The specific organizational culture, market conditions, and operational practices of ABC Company may not reflect those of other firms. As a concept paper, the study may lack empirical validation. The proposed relationships and frameworks are based on theoretical insights and literature, but they may need to be tested through empirical research to confirm their applicability in

real-world settings. The study may focus on certain aspects of management engagement, such as leadership communication or decision-making, while overlooking other factors like organizational support or employee engagement. This could result in an incomplete understanding of the full impact of management engagement on TQM implementation. The study's focus on the food and beverage industry means that the findings might not be applicable to other industries with different operational challenges and quality management requirements. Industry-specific factors, such as regulatory demands or consumer expectations, may limit the broader applicability of the results. If the study is based on a specific time frame, it may not capture long-term trends or changes in management engagement and TQM implementation. The dynamic nature of the industry and market conditions could lead to different outcomes over time. Future research should focus on empirically testing the proposed conceptual framework and hypotheses in multiple companies and across different sectors within the food and beverage industry. This will help validate the findings and enhance their generalizability. Comparative studies could be conducted to examine the impact of management engagement on TQM implementation across different industries. This would provide insights into how industry-specific factors influence the effectiveness of management engagement in quality management. Future research could involve longitudinal studies that track the impact of management engagement on TQM implementation over time. This would help identify long-term trends and provide a

deeper understanding of how sustained management engagement influences quality outcomes. Future research could explore the barriers to effective management engagement in TQM implementation, such as resistance to change or limited resources. Understanding these barriers can help in developing strategies to overcome them and improve TQM outcomes.

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ACKNOWLEDGMENT

A Quantitative Analysis of the Effect of Total Quality Management Practices on Operational Performance in SMEs in the Apparel Industry in Sri Lanka's Colombo District

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ABSTRACT

The study examines how Total Quality Management (TQM) practices affect the operational performance of Small and Medium Enterprises (SMEs) in the apparel industry in Sri Lanka's Colombo District. Previous research has focused on the relationship between TQM practices and operational performance in large-scale manufacturing. Still, little attention has been given to the Sri Lankan context, particularly for SMEs. Operational performance is essential for organizational success, making this research relevant in today's business environment. Using a quantitative and deductive approach, the study distributed questionnaires to senior managers in 140 apparel SMEs in the Colombo district, receiving 122 responses. Correlation and regression analyses demonstrate a strong connection between TQM practices (leadership, customer focus, continuous improvement, and process management) and operational performance measures (quality, productivity, flexibility, and delivery performance). The regression analysis shows that these TQM practices significantly contribute to operational performance. This research offers valuable insights for apparel SMEs and managers, improving their understanding of the impact of different TQM practices on operational performance. While the findings are specific to the Colombo District, they are considered relevant to all apparel SMEs in Sri Lanka.

Keywords - Apparel Industry, Small and Medium Enterprises, Colombo District, Total Quality Management, Operational Performance.

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1. INTRODUCTION

The focus on product quality has become a significant priority in today's competitive business environment. Consequently, companies are placing a greater emphasis on improving the quality of their products through continuous enhancement initiatives. This emphasis on product quality is an ongoing and evolving process for businesses (Shafiq et al., 2019). Companies are implementing concepts such as Total Quality Management (TQM), lean manufacturing, Six Sigma, and advanced manufacturing technology to improve their production processes (Shafiq et al., 2019). Most of the research on TQM practices has focused on their impact on operational performance in large-scale manufacturing while overlooking SMEs in the individual countries' apparel industry. This study aims to fill a significant research gap by investigating the effects of TQM practices on the operational performance of apparel SMEs in the Colombo district of Sri Lanka. It emphasizes the importance of understanding the role of TQM in improving efficiency in this sector.

The study's main objective is to investigate the relationship between Total Quality Management practices and operational performance in the SME apparel industry in the Colombo district of Sri Lanka. The secondary objectives are to explore the connection between independent variables and operational performance in the same industry. The primary research question is: What is the relationship between Total Quality Management Practices and Operational Performance? Secondary questions have been developed to examine the impact of each independent variable on the dependent variable. To test the relationship between the dependent and independent variables, four hypotheses have been formulated:

H1 - There is a relationship between Leadership and Operational performance

H2 - There is a relationship between Customer focus and Operational Performance

H3 - There is a relationship between Continuous Improvement and Operational Performance

H4 - There is a relationship between Process Management and Operational Performance.

This study aims to provide vital support to apparel SMEs by highlighting the significant impact of Total Quality Management (TQM) practices on operational performance. The findings will enable managers to make educated decisions, resulting in improved business outcomes. Enhancements in operational performance not only benefit employees in the apparel sector but also contribute significantly to Sri Lanka's foreign income through this crucial industry, thereby aiding future developments and government decision-making.

2. LITERATURE REVIEW

In 221 BC in China during the Chou Dynasty, physicians had to pass rigorous exams before practicing medicine. This ensured a certain level of competence and proficiency (Gana Kiritharan, 2003). In the 1920s, Total Quality Management (TQM) emerged in the United States, revolutionizing quality assurance by

prioritizing continuous improvement, customer satisfaction, and efficiency. Despite its recent origins, the practice of quality assurance traces back to ancient times and has evolved into the comprehensive approach it is today (Gana Kiritharan, 2003). Total Quality Management (TQM) involves applying quality management principles across all aspects of business operations, necessitating consistent implementation at all levels and departments (Jens J. Dahlgaard, 1997). The philosophy evolves through advanced quality management techniques. Key contributors include Dr Edward Deming, Dr Joseph Juran, and Philip Crosby. Noteworthy quality gurus, such as Crosby, Deming, Feigenbaum, Ishikawa, and Juran, have shaped TQM principles (Dr. Mohammed Seid1, 2019). TQM originated in the 1950s and gained popularity in the 1980s and 1990s, particularly in manufacturing industries, but has since been applied in healthcare, education, and service industries. One key principle of TQM is customer focus (Okoro, 2024). Organizations practising TQM prioritize understanding and meeting customer needs and expectations, gathering feedback, analysing data, and implementing changes to enhance satisfaction. Another crucial aspect is continuous improvement, involving ongoing evaluation and refinement of processes, products, and services (Okoro, 2024). Total Quality Management (TQM) is a comprehensive approach that considers both behavioural and technical aspects of quality management systems (Saleh et al., 2018). TQM is based on four fundamental principles: performance measurement, customer focus, continuous improvement,

and employee involvement, in addition to purchasing and supplier management. The foundations of the Total Quality Management (TQM) philosophy are based on seven core principles, encompassing policy, planning, administration, design control, materials control, production quality, user contact, corrective action, and employee management. TQM is widely viewed by some researchers as a system that effectively enhances employee development and fosters collaboration among personnel, customers, and managers through the appropriate utilization of information (Bytyçi et al., 2023). The incorporation of Total Quality Management (TQM) into an organization's operations can serve as a strategic advantage, significantly impacting its efficiency and long-term competitiveness (Bytyçi et al., 2023).

2.1 Total Quality Management Practices

2.1.1 Leadership

Leaders at the highest organizational level actively engage in communication and planning of company objectives, allocating significant resources to uphold quality standards, and considering quality as paramount. To successfully implement TQM, effective leadership is essential. Leaders are instrumental in setting a clear vision for quality improvement, establishing goals and objectives, allocating resources effectively, and providing support and guidance to employees (Management, 2024). Active participation of management leadership is crucial for the effectiveness of Total Quality Management (TQM) practices, particularly in the dynamic and

globally competitive apparel industry (Singh et al., 2018).

2.1.2 Customer Focus

Customer satisfaction is the ultimate goal in Total Quality Management (TQM), with a focus on customer needs, expectations, and feedback. Effective customer-focused strategies, as highlighted by (Dr. Mohammed Seid1, 2019), lead to superior quality, reliability, and timeliness, enhancing efficiency and productivity (Kebede Adem & Virdi, 2021). Periodic customer satisfaction feedback and thorough review of complaints are essential for maintaining quality standards (Singh et al., 2018). In Total Quality Management (TQM), the significance of customer satisfaction and relationships cannot be overstated, as they are essential components that contribute to heightened operational performance.

2.1.3 Continuous Improvement

TQM emphasizes continuous improvement, striving to exceed customer expectations through an integrative philosophy (Saleh et al., 2018).It promotes a proactive approach, continuously improving all facets of the business through gathering information, refining processes, benchmarking, analysing roles, and fostering open communication. (Dr. Mohammed Seid1, 2019). Continuous improvement, as emphasized by (Kebede Adem & Virdi, 2021), has a substantial impact on all operational performance metrics. This leads to increased competitiveness through reduced expenses and improved productivity. (Saleh et al., 2018). To achieve successful operational performance, it is imperative for employees to continually enhance the quality of their execution of daily tasks. Quality improvement necessitates a process management approach, which in turn fosters a continuous cycle of innovation and the enhancement of products and services (Rini et al., 2024).

2.1.4 Process Management

Process management, as per (Dr. Mohammed Seid1, 2019), integrates methodological techniques with human resource management to enhance processes for product and service delivery. Emphasizing preventive and proactive measures, minimizes variations, focusing on error-free processes, stable schedules, and efficient work distribution (Saleh et al., 2018). Improving process management significantly impacts quality performance, reducing errors and waste by minimizing process variation and increasing the proportion of goods passing final inspections without rework (Dr. Mohammed Seid1, 2019; Saleh et al., 2018). According to (Rini et al., 2024) Total Quality Management (TQM) can instil a culture of excellence within the organization, leading to continual enhancements in the quality of products and services.

2.2 Operational Performance

Operational performance, as defined by (Kebede Adem & Virdi, 2021), encompasses an organization's tangible outcomes in terms of quality, cost-effectiveness, productivity, and delivery efficiency. Manufacturing organizations must contribute to production efficiency,

high-quality products, customer satisfaction, and increased revenue. The concept encompasses various critical components such as productivity, quality, cost control, delivery speed, flexibility, and innovation. Enhancing operational performance is paramount for organizations to maintain their competitive edge in today's dynamic business landscape (Okoro, 2024). Operational performance relies on productivity, which represents the efficiency of input conversion. Organizations aim to boost productivity through process optimization, resource utilization, and waste reduction (Okoro, 2024). Operational performance can be evaluated through various metrics, including market outcomes, financial results, efficiency, employee performance, and customer satisfaction (B. T. D. N. Senarath G. C. I. Gunarathne T. S. S. Fernando, 2020). Researchers, such as Corbett and Van Wassenhove, propose dimensions like cost, quality, and delivery time, while others consider factors such as speed, flexibility, and dependability (Kebede Adem & Virdi, 2021; B. T. D. N. Senarath G. C. I. Gunarathne T. S. S. Fernando, 2020). Effective cost control is imperative for securing and maintaining profitability and sustainability within an organization. Through adept cost management, entities can bolster their financial performance and strategically allocate resources, thereby fostering long-term success (Okoro, 2024). The term "delivery speed" pertains to the duration required to deliver products or services to customers. In today's dynamic business environment, organizations must optimize their operations to fulfil customer demands promptly (Okoro, 2024).

2.3 Total Quality Management and Operational Performance

Several studies, including those by (Dr. Mohammed Seid1, 2019), (Niyi Anifowose et al., 2022, and B. T. D. N. Senarath G. C. I. Gunarathne T. S. S. Fernando, 2020), affirm a strong positive correlation between Total Quality Management (TQM) and operational performance. Although Total Quality Management (TQM) can significantly enhance the operational performance and long-term profitability of small and medium-sized enterprises (SMEs), its exact impact on financial performance still requires further analysis and clarification (Niyi Anifowose et al., 2022). Operational performance, encompassing cost, quality, delivery, customer service, flexibility, and process quality, is positively influenced by effective TQM implementation, leading to improved product quality and increased productivity (Dr. Mohammed Seid1, 2019).

2.4 Small and Medium Sized Enterprises (SMEs) and Apparel Industry

The study aims to investigate the impact of TQM practices on operational performance in the Apparel industry within the Colombo district of Sri Lanka. The Small and Medium-sized Enterprise (SME) sector is pivotal for the economic growth of developing nations, contributing to employment, income levels, and GDP. SMEs, particularly in the apparel industry, exhibit flexibility in adapting to market changes and creating skilled job opportunities. The apparel sector in Sri Lanka, employing over 300,000 people, significantly impacts the economy,

generating nearly 50% of foreign exchange earnings. Despite a slightly lower total export value of USD 435.20 million in 2022, compared to USD 435.36 million in 2021, the industry remains a major contributor, with most apparel exporters being small- or medium-scale businesses. Investigating the impact of Total Quality Management (TQM) practices on operational performance in this sector is crucial (Mahwish J. Khan, 2017).

2.4 Total Quality Management and Apparel Industry

The Sri Lankan apparel industry is an important contributor to foreign exchange earnings and employment. It faces intense global competition, which requires high-quality standards. Despite the widespread implementation of Total Quality Management (TQM) programs, many apparel export companies in Sri Lanka fail to achieve the expected benefits. Given the industry's significance for both large-scale and small to medium enterprises (SMEs), it is crucial to investigate the impact of TQM practices on the operational performance of Apparel SMEs in Sri Lanka's Colombo District (Durairatnam et al., 2021).

2.5 Summary

The literature review for this study was conducted through an extensive examination of key sources on Total Quality Management (TQM) and its impact on operational performance across various industries, with a specific focus on the apparel industry. The review included foundational theories and practices established by experts like Deming, Juran,

and Crosby, which provided a framework for analyzing the relevance of TQM principles, such as leadership, customer focus, continuous improvement, and process management (Jens J. Dahlgaard, 1997; Dr. Mohammed Seid1, 2019).The research was filtered to prioritize recent studies that assess TQM's measurable impact on operational metrics like productivity, cost control, and delivery efficiency, ensuring relevance to Small and Medium-sized Enterprises (SMEs) in emerging economies, particularly in Sri Lanka (Saleh et al., 2018); Kebede Adem & Virdi, 2021). Through this process, the literature review highlighted TQM's broad applications and emphasized its specific role in enhancing operational performance in SMEs within the apparel sector, which has seen mixed outcomes in Sri Lanka despite the widespread adoption of TQM programs (Mahwish J. Khan, 2017;Durairatnam et al., 2021).

3. METHODOLOGY

The research aims to develop a theoretical framework explaining the impact of Total Quality Management (TQM) techniques on operational performance. It includes an examination of existing literature, and methodology details, and provides valuable insights into TQM and its effects on operational performance.

The chosen independent variable in this study is Total Quality Management Practices, with Operational Performance serving as the dependent variable. Within the framework of Total Quality Management practices, the sub-variables selected are leadership, customer focus, continuous improvement, and process

management. The study's conceptual framework is illustrated in Figure 01.
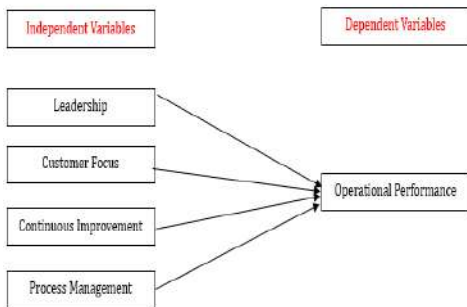
Figure 1 Conceptual Framework

The study uses a deductive research approach and employs a quantitative research strategy to examine the impact of Total Quality Management (TQM) practices on operational performance in Small and Medium-sized Enterprises (SMEs) in the Colombo district of Sri Lanka. The study population consists of over 200 apparel SMEs in the Colombo district. The targeted participants for data collection are senior managers within these SMEs. The unit of analysis is defined as the individual apparel SMEs in the Colombo district. To maintain representativeness and ensure a manageable sample size, the study uses a convenience sampling technique to select a total of 122 senior managers from apparel SMEs. These participants will help assess the relationship between TQM practices and operational performance. Data will be collected using a Likert scale questionnaire with three sections. The first section gathers demographic data to provide context, while the second section focuses on independent variables, including TQM practices such as leadership, customer focus, continuous improvement, and process management.

The third section addresses questions related to the dependent variable, operational performance. The collected data will be analysed using the Statistical Package for Social Sciences (SPSS) software. The choice of SPSS is justified as it is a widely recognized tool for statistical analysis in social science research, and it ensures a robust and systematic examination of the relationship between TQM practices and operational performance.

The deductive approach aligns with the study's objective of evaluating pre-established hypotheses based on existing theories and literature on Total Quality Management (TQM) practices. Utilizing a quantitative research strategy through SPSS allows for systematic measurement and analysis of numerical data, providing statistical insights into the relationship between TQM practices and operational performance. Convenience sampling is justified due to practical limitations and the need for a manageable sample size. Although this method may limit generalizability, focusing on senior managers ensures that the insights are drawn from individuals with significant influence and decision-making authority within the targeted SMEs.

In this study, we employed the Shapiro-Wilk test to assess the normality of our dataset comprising responses from 122 SMEs in Colombo District. The resulting p-value was 0.08. Given that this p-value is greater than 0.05, we conclude that our data is normally distributed. This finding is critical as it influences our choice of statistical methods for further analysis.

3. DATA ANALYSIS AND RESULTS

In this chapter, we'll analyze the data and present the research findings. The researcher used primary data to test their research hypothesis, involving demographic analysis, reliability testing, correlation examination, and hypothesis testing. The sample included over 100 small and medium-sized enterprises (SMEs) in the garment industry from the Colombo district. Data was collected using a Likert scale questionnaire. The convenience sampling technique was used, gathering 122 responses from over 100 respondents out of a total population of 200 (K. G. N. W. Abeyrathna, 2021).

A survey is conducted based on the number of employees in the company and their annual income, which includes the demographics of respondents.

To classify respondents as small or medium-sized enterprises, they reported their current number of employees. The findings reveal that the largest group, comprising 39.3%, consists of enterprises with 20 to 50 employees, indicating that this is the most common size among SMEs in the apparel industry within the Colombo District. The next largest group, at 27.9%, includes organizations with over 100 employees, followed by those with 50 to 100 employees at 19.7%. The smallest group, representing 13.1%, consists of organizations with fewer than 20 employees. Regarding annual income, 41% of the 122 enterprises surveyed reported revenues in Rs. 250-500 million range, while 31.1% reported less than Rs. 250 million, and 27.9% reported incomes between Rs. 500-750 million. Further details on these distributions are illustrated in Figures 1 and 2.
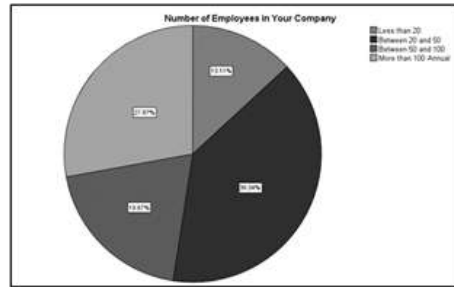
Figure 2. Number of Employees.
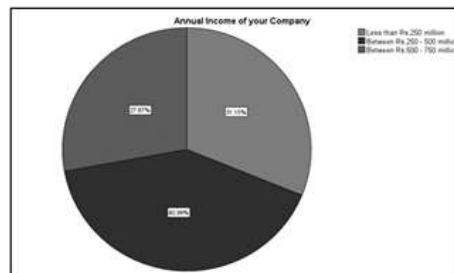
Figure 3. Annual Income.

The reliability test indicates the internal reliability of the indicators used to measure constructions. It also analyses how closely the indicators are linked to quantify their associated components (B. T. D. N. Senarath G. C. I. Gunarathne T. S. S. Fernando, 2020). Cronbach's Alpha value is in between 0-1. Here, it is considered that the value should exceed 0.7. If Cronbach's Alpha value of a variable exceeds 0.7, it means that the variables are reliable for the research. Using the SPSS software, we can obtain Cronbach's Alpha value for each variable, which means the reliability of the research variables. The reliability of the questionnaire is identified through the SPSS. The summary of the reliability analysis (Cronbach's alpha values) is represented in Table 1.

Table 1 Summary of Reliability Analysis

Variable Name	Cronbach's Alpha	Reliability	Conclusion
Leadership	0.939	0.939 > 0.7	Reliable
Customer Focus	0.933	0.933 > 0.7	Reliable
Continuous Improvement	0.908	0.908 > 0.7	Reliable
Process Management	0.909	0.909 > 0.7	Reliable
Operational Performance	0.937	0.937 > 0.7	Reliable

Table 2 Relationship between Independent variables and Dependent Variable

Dependent Variable	Independent Variable	Pearson Correlation	Significance of the Relationship
Operational Performance	Leadership	0.649	0.000
	Customer Focus	0.697	0.000
	Continuous Improvement	0.694	0.000
	Process Management	0.603	0.000

The correlation analysis helps to understand the connection between independent and dependent variables. Pearson Correlation values indicate how strong the relationship is between the independent factors and the dependent variables. The following analysis illustrates the relationship between independent variables and dependent variables.

Regression analysis is the next step in this research after the correlation analysis. The ultimate objective of this study is to examine how the independent variables connect to the dependent variable (operational performance measurements). This research includes more than one variable. So, multiple regression is used in this research. The extent to which the input variables explain the variance of the predicted variable is indicated by R-square. In another way, the R-square value represents the percentage to which extent the selected independent variables cover the variations in the dependent variable. If the R-square is high, the model fits better; if the R-square is low, the model fit is poor.

The hypothesis in multiple linear regression is addressed in this section depending on the coefficient. To test a theory about a population, sampling data is used. A hypothesis test determines how odd the result is if it is a fair chance variation or too extreme to be deemed a chance variation.

Interpret the beta coefficient and the significance required to accept or reject the tested hypothesis. The significance value is less than 0.05, and the beta coefficient sign is correct; it can be taken as an accepted hypothesis.

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coefficient. To test a theory about a population, sampling data is used. A hypothesis test determines how odd the result is if it is a fair chance variation or too extreme to be deemed a chance variation. Interpret the beta coefficient and the significance required to accept or reject the tested hypothesis. The significance value is less than 0.05, and the beta coefficient sign is correct; it can be taken as an accepted hypothesis. The multiple regression equations derived from the study can be expressed as;

The hypothesis in multiple linear regression is addressed in this section depending on the coefficient. To test a theory about a population, sampling data is used. A hypothesis test determines how odd the result is if it is a fair chance variation or too extreme to be deemed a chance variation. Interpret the beta coefficient and the significance required to accept or reject the tested hypothesis. The significance value is less than 0.05, and the beta coefficient sign is correct; it can be taken as an accepted hypothesis. The multiple regression equations derived from the study can be expressed as;

$$OP = \beta_0 + \beta_1 L + \beta_2 CF + \beta_3 CI + \beta_4 PM + \epsilon$$
$$OP = 0.649 + 0.132 + 0.234 + 0.204 + 0.208 + \epsilon$$

The multiple regression analysis indicates that all four TQM practices significantly contribute to improving operational performance in SMEs within the apparel industry in Sri Lanka, providing actionable insights for managers aiming to enhance their operational capabilities through enhance their operational capabilities through effective TQM strategies.

4. DISCUSSION OF THE FINDINGS

The analysis of the received responses indicates that most enterprises, specifically 39.3%, fall into the "Between 20 and 50" employee category, highlighting that this is the most prevalent size among SMEs in the apparel industry within the Colombo District. Additionally, the second largest group comprises organizations with more than 100 employees, underscoring the significant presence of larger SMEs in the region.

In here, 34 enterprises have responded, and its percentage is 27.9%. For the category between 50-100 employees, responses have been received from 24 organizations, which is 19.7%, and the lowest response for the number of employees is for the category of less than 20 employees, which is 13.1% as a percentage. The highest number of enterprises, which has 50 enterprises out of 122, have responded to the "between Rs.250-500 million" category. As a percentage, it is 41%. The second highest responses are received for "less than Rs.250 million." As a percentage, it is 31.1%. The least number of responses have been received for the category of "between Rs.500-750 million" and as the percentage of 27.9%.

Leadership is identified as the first independent variable in the conceptual framework chosen to investigate the impact on operational performance. According to the correlation analysis, there is a strong positive relationship between operational performance and leadership, which can be identified 64.9% of the time. It reveals that the level of leadership execution enhanced operational performance and the number of Apparel SMEs in the Colombo district. Because the significance value is smaller than 0.05 (0.001 < 0.05), the association is significant to Apparel SMEs in the Colombo District. The standardized beta coefficient for leadership was 0.232, and the significance level was 0.000. Assuming all other variables remain equal, we can expect a 0.232 unit increase in operational performance in Apparel SMEs in the Colombo district for every unit increase in leadership. As a result, leadership has a beneficial impact on the operational performance of apparel SMEs in Sri Lanka's Colombo district, and the benefit is

considerable to the apparel SMEs as well. Researchers can accept the first research hypothesis (H1) based on the above findings.

Customer focus is the second independent variable in the conceptual framework chosen to investigate the impact on operational performance (Dependent variable). According to the correlation analysis, there is a strong positive relationship between operational performance and customer focus, which can be identified 69.7% of the time. It reveals that customer focus enhanced operational performance and the number of Apparel SMEs in the Colombo district. Because the significance value is smaller than 0.05 (0.001 < 0.05), the association is significant to Apparel SMEs in the Colombo District. The standardized beta coefficient for customer focus was 0.327, and the significance level was 0.000. Assuming all other variables remain equal, we can expect a 0.327 unit increase in operational performance in Apparel SMEs in the Colombo district for every unit increase in customer focus. As a result, Customer focus has a beneficial impact on the operational performance of apparel SMEs in Sri Lanka's Colombo district, and the benefit is considerable to the apparel SMEs as well. Researchers can accept the second research hypothesis (H2) based on the above-mentioned findings.

Continuous Improvement is identified as the third independent variable in the conceptual framework chosen to investigate the impact on operational performance (Dependent variable). According to the correlation analysis, there is a strong positive relationship between operational performance and continuous improvement, which can be identified 69.4% of the time. It reveals that continuous improvement enhanced operational performance and the number of Apparel SMEs in the Colombo district. Because the significance value is smaller than 0.05 (0.001 < 0.05), the association is significant to Apparel SMEs in the Colombo District. The standardized beta coefficient for continuous improvement was

0.287, and the significance level was 0.000. Assuming all other variables remain equal, we can expect a 0.287 unit increase in operational performance in Apparel SMEs in the Colombo district for every unit increase in continuous improvement. As a result, continuous improvement has a beneficial impact on the operational performance of apparel SMEs in Sri Lanka's Colombo district, and the benefit is considerable to the apparel SMEs as well. Researchers can accept the third research hypothesis (H3) based on the above findings.

The final independent variable in the chosen conceptual framework to investigate its impact on operational performance (dependent variable) is Process Management. According to the correlation analysis, there is a strong positive relationship (60.3%) between operational performance and process management. This indicates that higher levels of process management enhance operational performance in the Apparel SMEs in the Colombo district. With a significance value smaller than 0.05 (0.001 < 0.05), the association is significant for the Apparel SMEs in the Colombo district. The standardized beta coefficient for process management was 0.281, with a significance level of 0.000. Holding all other variables constant, a unit increase in process management is associated with a 0.281 unit increase in operational performance for Apparel SMEs in the Colombo district. Thus, process management significantly benefits the operational performance of apparel SMEs in Sri Lanka's Colombo district. Based on these findings, researchers can accept the fourth and final research hypothesis (H3).

5. CONCLUSION

This research investigates the impact of Total Quality Management (TQM) practices on operational performance in Small and Medium-sized Enterprises (SMEs) within

the Sri Lankan apparel industry, specifically in the Colombo district. The primary objective is to examine the relationship between TQM practices and operational performance, with secondary objectives focusing on specific TQM dimensions like leadership, customer focus, continuous improvement, and process management. A Likert scale questionnaire was distributed among 140 apparel SMEs, and 122 responses were analysed using descriptive, reliability, correlation, and regression analyses.

The findings suggest a strong positive correlation between TQM practices and operational performance in the apparel SMEs in the Colombo district. Leadership, customer focus, continuous improvement, and process management were identified as crucial TQM dimensions contributing significantly to operational performance. The regression analysis confirmed a 73.9% impact on operational performance by these TQM dimensions.

Recommendations based on the findings include emphasizing the implementation of TQM dimensions like leadership, customer focus, and continuous improvement to enhance operational performance. Additionally, it is advised for apparel SMEs to consider other TQM practices such as employee involvement, product design, statistical process control, people management, and employee education to further improve their operations.

Specifically, a focus on customer-focused operations is recommended, urging collaboration with customers to better understand and meet their demands. Leadership is emphasized to avoid decision-making issues. The study suggests expanding the research to include all apparel SMEs in Sri Lanka and incorporating both quantitative and qualitative methods for more comprehensive insights.

Despite the valuable contributions, limitations exist, including constrained sample size, time constraints, and a focus on quantitative analysis only. The research acknowledges potential data inaccuracies due to reliance on respondents' information. Future studies should address these limitations and explore additional TQM practices for a more holistic understanding.

In conclusion, the research underscores the significant role of TQM practices, especially leadership, customer focus, continuous improvement, and process management, in enhancing operational performance in the apparel SMEs of the Colombo district. The recommendations aim to guide apparel SMEs toward effective TQM implementation for improved product quality, reduced production costs, and increased flexibility, ultimately contributing to enhanced operational performance.

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ACKNOWLEDGMENT

Driving Organizational Excellence through Strategic Business Transformation and Agile Project Development

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ABSTRACT

In modern business's dynamic and competitive landscape, achieving organizational excellence is paramount for sustained success. This paper explores integrating strategic business transformation and agile project development as a dual approach to driving organizational excellence. Strategic business transformation involves rethinking and realigning an organization's processes, structures, and strategies to adapt to changing market conditions and achieve long-term objectives. With its iterative and flexible methodologies, Agile project development enhances responsiveness and innovation, allowing organizations to adapt to customer needs and market shifts quickly. By examining the synergies between these two approaches, this paper demonstrates how their combined implementation can

significantly improve efficiency, adaptability, and overall performance.

The paper comprehensively analyzes the benefits and challenges of this integrated approach through a review of relevant literature, detailed case studies, and empirical data. The findings reveal that organizations embracing both strategic business transformation and agile methodologies are better equipped to navigate the complexities of today's business environment, ultimately driving excellence and achieving competitive advantage. This research contributes to the existing body of knowledge by providing actionable insights and practical frameworks for practitioners aiming to enhance their organization's performance and resilience through strategic and agile initiatives.

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Keywords - **Strategic Business Transformation, Agile Project Development, Organizational Excellence**

1. INTRODUCTION

In an era characterized by rapid technological advancements, evolving market dynamics, and increasing competition, pursuing organizational excellence has become a critical objective for businesses striving for sustainability and growth. Organizational excellence is not merely a static state but a continuous journey of improvement and innovation that demands a strategic approach and agile adaptability. This paper delves into integrating two pivotal concepts—strategic business transformation and agile project development—as synergistic pathways to achieving and sustaining organizational excellence. Strategic business transformation is the comprehensive process of realigning an organization's strategies, structures, and operations to meet new challenges and leverage emerging opportunities. It fundamentally rethinks business models, methods, and practices to enhance efficiency, effectiveness, and competitive positioning. On the other hand, agile project development, rooted in principles of flexibility, iterative progress, and customer-centricity, offers a dynamic approach to managing projects that can rapidly respond to changes and deliver incremental value. The intersection of these two approaches provides a robust framework for organizations seeking to thrive in a complex and fast-paced environment. While strategic transformation sets the direction and foundation for long-term success, agile methodologies enable organizations to execute and adapt quickly, ensuring that strategic goals are met with operational agility. Agile project development, on the other hand, is a methodology that emphasizes flexibility, collaboration, and rapid iteration in project management. Unlike traditional, linear project management approaches, agile methods prioritize customer feedback and adaptability, allowing teams to respond quickly to changes and deliver value incrementally. This approach has gained significant traction in industries such as software development, but its principles are increasingly being applied across various sectors. Agile project development enables organizations to innovate faster, reduce time to market, and better align products and services with customer needs, all of which are critical to achieving organizational excellence.

This paper explores the impact of strategic business transformation and agile project development on driving organizational excellence. By reviewing relevant literature, analyzing case studies, and synthesizing empirical data, this study seeks to provide a comprehensive understanding of how these methodologies can be effectively integrated. The findings are expected to offer valuable insights and practical frameworks for practitioners and leaders committed to enhancing their organization's performance, resilience, and competitive edge in the contemporary business landscape.

The following sections will delve deeper into the concepts of strategic business transformation and agile project

development, examine their individual and combined effects on organizational excellence, and present real-world examples and case studies to illustrate successful implementations. Through this exploration, the paper aims to contribute to the ongoing discourse on how organizations can navigate the complexities of modern business environments to achieve sustained excellence.

2. MOTIVATION

Fundamental goal for organizations striving to thrive amidst shifting market demands, technological advancements, and intensifying competition. Achieving and sustaining this excellence requires more than traditional strategies; it demands innovative, adaptive approaches that align long-term strategic visions with responsive, agile practices. This paper is motivated by the urgent need to bridge the gap between visionary, large-scale transformations and the flexible, incremental nature of agile methodologies, presenting a cohesive framework to enhance organizational resilience and adaptability.

At the heart of this research is the observation that organizations often struggle with implementing extensive changes effectively while remaining nimble enough to respond to real-time market shifts. Strategic business transformation and agile project development are two established yet distinct methodologies that hold transformative potential when harmonized. Strategic business transformation encompasses the comprehensive re-evaluation and restructuring of organizational processes, resources, and

cultures to align with evolving objectives and foster long-term growth. Conversely, agile project development emphasizes iterative progress, collaboration, and responsiveness, enabling organizations to address customer needs swiftly and adjust operations in dynamic environments. This dual approach provides a pathway for organizations to achieve excellence by combining the foresight of strategic planning with the agility of iterative execution.

The motivation to explore the integration of these approaches stems from the need for organizations to remain competitive and innovative while ensuring that strategic objectives are achieved through actionable, adaptive steps. With an increasing reliance on technological advancements and customer-centric models, many industries are undergoing unprecedented shifts in operations and expectations. This reality drives the imperative for companies to not only transform but to do so with agility making it possible to navigate uncertainties without compromising on growth or customer satisfaction. As global case studies have shown, organizations that successfully integrate agile methodologies within a broader strategic framework have outperformed their peers in adaptability, time-to-market, and employee engagement. Examples like ING's agile transformation and Microsoft's adoption of agile principles highlight how organizations can harness both strategic and agile strengths to meet and exceed market expectations.

In summary, this study is motivated by the growing need for agile, transformative approaches that empower organizations to

achieve and sustain excellence. By integrating strategic business transformation and agile project development, this paper aims to illuminate a path forward for organizations seeking to build resilience, foster innovation, and secure competitive advantage in an era marked by relentless change.

3. LITERATURE REVIEW

The quest for organizational excellence is a multifaceted endeavor that necessitates a deep understanding of various strategies and methodologies. This literature review synthesizes key findings and theoretical perspectives on strategic business transformation and agile project development, elucidating their roles in driving organizational excellence.

3.1 ORGANIZATIONAL EXCELLENCE

Organizational excellence is often defined as the consistent delivery of superior performance and the ability to sustain high levels of quality and productivity over time. According to **Peters and Waterman (1982),** excellence entails not only financial success but also operational efficiency, innovation, customer satisfaction, and employee engagement criteria elaborate on frameworks for achieving and measuring excellence.

It refers to the consistent achievement of outstanding results that meet or exceed stakeholder expectations through a systematic and continuous improvement process. Scholars such **as Peters and Waterman (1982)** in their seminal work "In Search of Excellence" have highlighted the importance of factors like customer orientation, leadership, and a culture of innovation in driving organizational success. Organizational excellence is often associated with the adoption of best practices, robust management systems, and a strong alignment between an organization's strategic objectives and its operational execution.

The literature highlights several models and frameworks that guide strategic business transformation. For example, the **McKinsey 7-S framework, developed by Waterman, Peters, and Phillips (1980),** underscores the interdependence of seven in achieving effective transformation. Moreover, studies by **Johnson, Scholes, and Whittington (2008)** suggest that successful transformations are often underpinned by a clear understanding of the organization's strategic position, a well-defined change agenda, and a phased implementation approach.

- Enhancing Re
- responsiveness and Innovation

Agile project development, originally conceived within the software industry, has expanded its influence across various sectors as a methodology that promotes flexibility, iterative progress, and customer-centricity. The Agile Manifesto (2001) laid the foundational principles of agile methodologies, emphasizing Research by **Highsmith and Cockburn (2001) and more recently by Dikert, Paasivaara, and Lassenius (2016)** indicates that fostering innovation and ensuring that projects deliver maximum value. Agile practices such as Scrum, Kanban, and Extreme Programming (XP) have been widely adopted and have

demonstrated effectiveness in improving project success rates, reducing time to market, and enhancing customer satisfaction.

- Agile Project Development

agile project development can create a powerful synergy for driving organizational excellence. While strategic business transformation provides the overarching direction and long-term focus, agile project development offers the flexibility and speed required to navigate the complexities of modern business environments. According to studies by Leffingwell (2011) and Conboy (2009), organizations that successfully combine these approaches can achieve a balance between strategic foresight and operational agility, enabling them to respond effectively to both internal and external challenges.

Case studies by **organizations such as ING (as reported by Denning, 2018)** demonstrate how combining strategic transformation with agile practices can lead to enhanced organizational performance. ING's transformation involved restructuring the entire organization around agile principles, resulting in greater customer satisfaction, faster time to market, and improved employee engagement. Similarly, research by McKinsey (2019) indicates that companies adopting agile at scale alongside strategic transformations are more likely to achieve sustained competitive advantage.

3.2 STRATEGIC BUSINESS TRANSFORMATION

Strategic business transformation involves comprehensive changes to an organization's strategy, structure, and processes to align with evolving market demands and technological advancements. The literature identifies several drivers for transformation, including globalization, technological innovation, regulatory changes, and **shifts in consumer behavior (Kotter, 1996; Nadler & Tushman, 1997).**

- Leadership and Vision

There are foundational elements in the process of driving organizational excellence, particularly in the context of strategic business transformation and agile project development. Both concepts are deeply intertwined and play a critical role in shaping the direction, culture, and success of an organization. **Strong leadership is critical for setting a clear vision and guiding the organization through change (Kotter, 1996).**

Leadership is the ability to inspire, influence, and guide others toward the achievement of organizational goals. In the context of strategic business transformation, effective leadership is essential for several reasons.

- Change Management.

Change management is a critical process that involves preparing, supporting, and helping individuals, teams, and organizations adapt to changes. In the context of agile project management, and change management both the agile methodologies and the changes introduced during the project are effectively integrated into the organization. Agile project management, by its nature, is dynamic and iterative. It thrives on flexibility and adaptability, often requiring continuous

changes to project scope, processes, and even objectives based on customer feedback and evolving requirements. As a result, managing change effectively becomes essential to the success of agile projects. **Effective change management practices are essential for overcoming resistance and ensuring stakeholder engagement (Hiatt & Creasey, 2003).**

- Innovation and Adaptability

Innovation and adaptability are essential drivers of the continuous pursuit of new ideas, products, and processes that can enhance an organization's competitive edge. Adaptability, on the other hand, is the ability to respond swiftly and effectively to changing conditions, whether they be market shifts, technological advancements, or evolving customer needs. Together, these qualities enable organizations to not only survive but thrive amid uncertainty. In the context of agile project management and strategic business transformation, fostering a culture of innovation and adaptability ensures that organizations remain resilient, capable of seizing new opportunities, and consistently delivering value in a dynamic world. **Organizations that effectively integrate strategic and agile approaches are better positioned to maintain a sustainable competitive advantage in volatile markets (Rigby et al., 2016).** Case studies, such as those of IBM's agile transformation and ING's shift to an agile operating model, demonstrate the potential for these integrated strategies to drive significant improvements in organizational performance and customer satisfaction.

Empirical research supports the efficacy of combining strategic business transformation with agile methodologies. For example, a study by the Project Management Institute (PMI, 2017) found that organizations employing both strategies reported higher project success rates and greater alignment with business objectives. Additionally, case studies of companies like Microsoft and Spotify illustrate how agile practices can complement strategic transformation efforts, leading to enhanced innovation, operational efficiency, and market responsiveness **(Kniberg & Ivarsson, 2012; Microsoft Annual Report, 2019).**

In conclusion, strategic business transformation and agile project development are critical in driving organizational excellence. While strategic transformation provides the necessary foundation for long-term success through visionary leadership, innovation, and structural realignment, agile project development ensures that organizations remain responsive, customer-focused, and adaptable in a rapidly changing environment. The integration of these approaches offers a robust pathway for organizations seeking to achieve and sustain excellence in an increasingly complex and competitive global market. As the business landscape continues to evolve, further research into the synergies between these methodologies will be essential for developing new strategies and best practices for organizational success.

4. LITERATURE REVIEW ANALYSIS

The pursuit of organizational excellence requires a multi-layered approach that

balances both long-term strategic transformation and agile adaptability. The literature underscores that organizational excellence is not simply a result but an ongoing process demanding continuous improvement, customer-centricity, and alignment between strategic objectives and daily operations. A clear theme throughout the literature is the importance of merging strategic business transformation with agile project development to create a framework that not only supports sustainable growth but also positions organizations to respond swiftly to evolving market conditions and technological changes.

- Organizational Excellence and Foundational Frameworks

Scholars like **Peters and Waterman (1982)** have defined organizational excellence as the sustained delivery of high performance and quality, achieved by maintaining operational efficiency, innovation, customer satisfaction, and employee engagement. The McKinsey 7-S framework, which highlights the interconnectedness of seven organizational factors (strategy, structure, systems, shared values, style, staff, and skills), provides a robust foundation for managing effective transformations **(Waterman, Peters, & Phillips, 1980). Other studies (Johnson, Scholes, & Whittington, 2008)** highlight that successful transformation requires a strong understanding of an organization's strategic position, a clear change agenda, and an incremental implementation approach. These foundational frameworks emphasize that transformation is not solely about large-scale changes but about creating an adaptable, responsive organization that

continually aligns its objectives with market realities.

- The Role of Agile Project Development in Enhancing Responsiveness

Agile methodologies, which originated in the software industry, have proven highly adaptable across sectors for promoting flexibility and customer-centricity. The Agile **Manifesto (2001)** introduced core principles, including prioritizing individuals and interactions, focusing on working products, emphasizing customer collaboration, and responding to change. Research by **Highsmith and Cockburn (2001) and later by Dikert, Paasivaara, and Lassenius (2016)** validate Agile's effectiveness in driving innovation and customer satisfaction. Agile practices, such as Scrum, Kanban, and Extreme Programming (XP), improve project outcomes by focusing on iterative progress and continuous feedback loops, which reduce time-to-market and ensure that project outputs meet evolving customer expectations. As such, agile methodologies not only support efficiency and responsiveness but also cultivate a culture of adaptability that is vital for long-term organizational success.

- Strategic Business Transformation and Leadership

The importance of leadership and vision in facilitating strategic business transformation. Leadership in transformation is critical for setting a clear

organizational vision and fostering a culture that is receptive to **change (Kotter, 1996). Effective change management, as discussed by Hiatt and Creasey (2003),** is essential to overcoming resistance, aligning stakeholder expectations, and promoting engagement. Agile project management complements this by fostering continuous feedback and iterative progress, which helps organizations navigate challenges associated with transformation. The integration of agile into transformation initiatives allows organizations to maintain a flexible approach, adjusting to feedback and shifting conditions, thus ensuring that transformation initiatives are both impactful and aligned with stakeholder needs.

- Synergies between Strategic Transformation and Agile Methodologies

Combining strategic transformation with agile methodologies creates a synergistic framework that strengthens both long-term planning and operational flexibility. Studies **by Leffingwell (2011) and Conboy (2009)** confirm that organizations integrating these approaches achieve a balance between strategic foresight and adaptability. Case studies, including ING's shift to an agile model, IBM's adoption of agile practices, and Microsoft's cloud transition, demonstrate how agile methods enhance organizational resilience and innovation. These organizations saw improvements in customer satisfaction, time-to-market, and employee engagement, underscoring that agile practices enable rapid response to

market demands while staying aligned with broader strategic goals.

- Innovation and Adaptability as Pillars of Competitive Advantage

The literature highlights innovation and adaptability as crucial drivers of competitive advantage in volatile markets **(Rigby et al., 2016).** Agile methodologies support this by encouraging incremental progress, which fosters experimentation and learning while reducing the risks of large-scale implementation failures. Strategic transformation, when paired with agile, builds an organizational culture that values continuous improvement, positioning the organization to respond effectively to external pressures and internal performance challenges. Empirical studies from the **Project Management Institute (PMI, 2017)** and cases like Spotify's agile model further validate that the integration of these methods leads to enhanced innovation, operational efficiency, and overall market responsiveness.

- Evidence of Effective Integration

Real-world applications of integrating strategic transformation and agile methodologies illustrate their effectiveness in driving organizational excellence. ING's restructuring around agile principles is a prominent example, where the agile transformation resulted in better customer satisfaction, faster service delivery, and improved employee morale (Denning, 2018). Microsoft's shift under CEO Satya Nadella, which incorporated agile frameworks in product development and cloud services, is another compelling case. Microsoft's adoption of Scrum and Kanban

enabled it to accelerate product releases, maintain high-quality standards, and improve alignment with customer needs. These examples demonstrate how the combined strategies provide a framework for sustainable growth and resilience in dynamic business environments.

The literature highlights that strategic business transformation and agile project development are not merely complementary but mutually reinforcing. Strategic transformation provides a clear direction and long-term focus, while agile project development ensures responsiveness and adaptability. Together, these methodologies create a holistic approach that enables organizations to achieve excellence by fostering a culture of innovation, enhancing operational efficiency, and ensuring customer-centricity. This integrated framework is increasingly essential in today's complex, competitive global market, where the ability to balance strategic foresight with operational agility is key to sustained success. The literature emphasizes that further exploration into the synergies between these methodologies can yield actionable insights, helping organizations refine their approach to driving excellence.

5. OBJECTIVES

The research objectives for the topic "Driving Organizational Excellence through Strategic Business Transformation and Agile Project Development" are designed to explore and analyze the intricate relationship between strategic transformation initiatives and the enhancement of organizational performance. The objectives focus on understanding how organizations can leverage business transformation and agile methodologies to achieve excellence in a highly competitive and dynamic business environment. There are three main objectives.

1. Identify the Key Components of Strategic Business Transformation

Identify and examine the key components of strategic business transformation that contribute to organizational excellence. This includes understanding the role of leadership, vision, and strategy in setting the direction for transformation initiatives. By analyzing these components, the research aims to uncover the critical factors that organizations must focus on to drive successful transformation. This objective will help in developing a comprehensive framework that organizations can adopt to align their transformation efforts with their overarching goals of excellence.

2. Evaluate the Role of Agile Project Development

The second objective is to investigate the role of agile project development in facilitating strategic business transformation. Agile methodologies, with their focus on flexibility, continuous improvement, and customer-centricity, are increasingly being adopted by organizations to manage transformation projects. This research will explore how agile practices, such as, contribute to the successful implementation of transformation initiatives. Additionally, the objective seeks to understand how agile project management can help organizations respond more effectively to changes in the business

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environment, thereby driving sustained excellence.
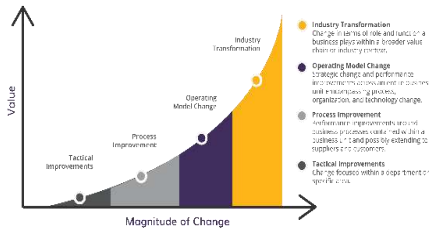
Figure 1. Magnitude of change

3. **Assess the Impact on Organizational Performance**

Another critical objective is to assess the impact of strategic business transformation and agile project development on key performance indicators (KPIs) of organizational excellence. This involves evaluating how transformation initiatives affect metrics such as customer satisfaction, operational efficiency, employee engagement, and financial performance. By analyzing these outcomes, the research aims to provide empirical evidence of the benefits of combining strategic transformation with agile practices, offering insights into the tangible improvements that organizations can achieve.

Furthermore, the research seeks to identify the challenges and barriers that organizations face when implementing strategic business transformation and agile project development. Understanding these challenges is crucial for developing strategies to mitigate risks and ensure the successful execution of transformation initiatives. This objective will also explore the role of change management in addressing resistance to change and

fostering a culture of continuous improvement.

6. **METHODOLOGY**

This section outlines the research methodology to explore how strategic business transformation and agile project development drive organizational excellence. The application of these strategies. Additionally, a review of relevant literature and existing frameworks was conducted to establish a theoretical foundation. The methodology is designed to examine the synergies between strategic transformation and agile practices, evaluate their impact on organizational performance, and identify best practices for successful implementation.

• Data Collection

There is a mixed-methods approach to investigating the role of strategic business transformation and agile project development in driving organizational excellence.

1. Quantitative data -: In-depth interviews were conducted with senior leaders, project managers, and industry experts from various sectors who have experience in implementing strategic transformations and agile methodologies. These interviews aimed to capture their insights, challenges, and success stories related to driving organizational excellence.

2. Qualitative data -: A survey was distributed to a broader audience, including professionals involved in

strategic planning and agile projects. The survey focused on measuring the impact of these practices on key performance indicators such as innovation, efficiency, customer satisfaction, and overall organizational performance.

Data collection was conducted through multiple methods: **surveys** were distributed to a broad range of professionals involved in strategic planning and agile projects to gather quantitative data on the impact of these practices on organizational performance. **In-depth interviews** with senior leaders and project managers provided qualitative insights into the practical challenges and successes experienced during implementation. Additionally, **case studies** of organizations that have successfully integrated strategic transformation and agile methodologies were examined to contextualize the findings and offer real-world examples.

- Case Study

To contextualize the findings, case studies of organizations that have successfully integrated strategic transformation and agile development were analyzed. These case studies provide real-world examples of how these methodologies contribute to sustained excellence.

Involved both qualitative and quantitative approaches to comprehensively examine the impact of strategic business transformation and agile project development on organizational excellence. Qualitative data from interviews were analyzed using thematic analysis, identifying key patterns and themes related to leadership, innovation, and adaptability. Quantitative data from surveys were statistically analyzed to evaluate correlations between agile practices, strategic initiatives, and performance metrics such as efficiency, customer satisfaction, and innovation. The integration of these analyses provided a nuanced understanding of how these methodologies collectively drive organizational success. The choice of this mixed methodology is justified by the need to capture both the measurable outcomes and the nuanced, contextual factors that influence the success of strategic business transformation and agile project development, offering a well-rounded understanding of their impact on organizational excellence.

Figure 2. Contribution of Key factors Organizational Excellence

Quantitative survey data were statistically analyzed to assess correlations between agile practices, strategic initiatives, and performance outcomes. The choice of this mixed methodology is justified by the need to capture both the measurable outcomes and the nuanced, contextual factors that influence the success of strategic business transformation and agile project development, offering a well-rounded understanding of their impact on organizational excellence.

- Data Analysis

In this research, a pie chart was employed to visually capture and represent the distribution of key themes or factors identified through the qualitative analysis. This approach was chosen because pie charts are particularly effective at illustrating proportions and showing how different components contribute to a whole, making complex data more accessible and easier to interpret at a glance. The pie chart in this context serves to depict the percentage contribution of various critical factors such as leadership, employee engagement, technological adoption, and process optimization to the overall success of strategic business transformation and agile project development. Each slice of the pie corresponds to a specific theme or factor that emerged from the interviews and case studies conducted as part of the research. These themes represent the recurring patterns and dominant concepts identified as being most influential in driving successful outcomes in the organizations studied.

For instance, the chart might reveal that technological adoption constitutes 30% of the factors contributing to success, highlighting the importance of integrating new technologies into organizational processes to enhance efficiency, innovation, and competitive advantage. Leadership might account for 25%, reflecting the significant role that strong, visionary leadership plays in steering the organization through the complexities of transformation and ensuring alignment with strategic objectives. Employee engagement could represent 20%, underscoring how crucial it is to have a motivated and committed workforce that actively participates in and supports the change process. Process optimization might contribute 15%, pointing to the benefits of refining and streamlining business processes to achieve better performance and cost savings. Finally, change management might comprise 10% of the chart, illustrating the necessity of managing the human and operational aspects of change effectively to minimize resistance and ensure smooth implementation.

Summarizing these findings, the pie chart provides an immediate and intuitive understanding of the relative importance of each factor. It allows stakeholders to quickly grasp which elements are most critical to focus on for achieving excellence in strategic business transformation and agile project development. Moreover, the visual representation facilitates communication of the research outcomes to a broader audience, making it easier for decision-makers to identify key areas for improvement and to strategize accordingly.

This method of data visualization thus plays a crucial role in translating complex qualitative data into actionable insights,

contributing to a deeper and more holistic understanding of the dynamics at play in successful organizational transformations.

7. FUTURE IMPLEMENTATION
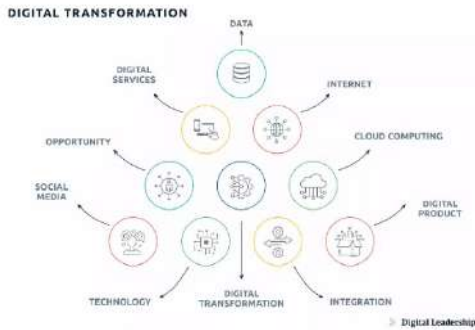
Figure 3. Digital transformation

Future implementations of strategic business transformation and agile project development can play a crucial role in driving organizational excellence dynamic business environment. For organizations to thrive, they need a flexible, responsive framework that can adapt to rapid changes while maintaining alignment with long-term strategic objectives. A critical focus for future implementations is the scalability of agile practices across the organization. Frameworks like the Scaled Agile Framework and Large-Scale Scrum provide structures that allow agile methodologies to operate effectively beyond individual teams. By implementing agile at scale, organizations can ensure that their operations remain adaptable and customer-focused even as they grow, enabling them to swiftly respond to market shifts and competitive pressures.

Another essential component of future implementations is technology integration, particularly with data-driven tools like artificial intelligence (AI) and analytics. Advanced analytics and predictive modeling can support agile project teams and strategic planners by providing real-time agile teams to make informed decisions and adjustments rapidly, aligning their efforts with organizational goals and minimizing risks. For example, AI can help agile teams anticipate potential obstacles or bottlenecks, allowing them to pivot effectively. Integrating technology into agile practices can also streamline operations, drive innovation, and empower organizations to respond to challenges with agility and precision.

To maximize the benefits of integrating strategic and agile practices, continuous feedback loops are essential. Agile's emphasis on iterative development naturally aligns with a continuous improvement culture, ensuring that projects and transformations stay relevant to current customer needs. By incorporating mechanisms for feedback at every stage of the agile process, such as retrospectives, sprint reviews, and customer feedback sessions, organizations can consistently refine their projects and align them with broader strategic objectives. This approach ensures that both strategic and agile efforts contribute to sustained excellence, fostering a proactive environment where teams can adapt to changing circumstances.

Future implementations should also focus on building cross-functional teams that bring together diverse skills across technical, operational, and strategic areas. These teams are better equipped to handle complex projects that require both big-picture thinking and detailed execution. By breaking

down silos and promoting collaboration, cross-functional teams can bring innovative solutions and respond more quickly to emerging challenges. Lastly, effective leadership and cultural adaptation are essential in future implementations. Leaders play a critical role in bridging the gap between strategic vision and agile practices, guiding teams through transformation while cultivating a culture that values flexibility, transparency, and continuous learning. Developing leaders who can navigate both agile methodologies and strategic goals ensures that the organization's transformation efforts are sustained and aligned with long-term objectives.

In summary, future implementations that emphasize scalability, technology integration, continuous feedback, cross-functional collaboration, and agile-minded leadership will strengthen organizations' abilities to adapt and excel. By focusing on these areas, organizations can create a sustainable framework that drives both strategic growth and operational agility, achieving excellence in an ever-evolving business landscape.

8. STRATEGIC BUSINESS TRANSFORMATION

Strategic business transformation refers to the comprehensive and deliberate process of changing an organization's structure, operations, strategies, or culture to achieve significant improvements in performance, competitiveness, and sustainability. Unlike incremental changes, strategic transformation involves fundamental shifts that align the organization's core business processes and strategies with evolving market conditions, technological advancements, and internal growth objectives. This transformation is crucial as it enables organizations to stay relevant, adapt to disruptive forces, and capitalize on new opportunities, ensuring long-term success and resilience in a dynamic business environment.

There are include leadership commitment, clear vision and strategy, technology integration, organizational culture change, and process optimization. Leadership commitment is essential to drive the transformation from the top down, ensuring that the vision is communicated and embraced across all levels of the organization. A clear vision and strategy provide direction and purpose, guiding the transformation efforts toward specific, measurable goals. Technology integration plays a pivotal role in enabling new capabilities, streamlining operations, and driving innovation. Organizational culture change is necessary to align employee behaviors and mindsets with the new strategic direction, fostering an environment conducive to transformation. Process optimization involves reengineering existing processes to enhance efficiency, reduce costs, and improve overall performance.

Strategic business transformation **drives organizational excellence** by fundamentally improving how an organization operates, competes, and delivers value. It allows organizations to realign their resources and capabilities with market demands, leading to enhanced productivity, customer satisfaction, and profitability. By fostering innovation, improving operational efficiency, and

enabling agile decision-making, strategic transformation positions organizations to excel in their industries and achieve sustainable growth.

Figure 4. Strategic business transformation

One of the primary ways strategic transformations drive organizational excellence is through the enhancement of operational efficiency. By reengineering business processes, eliminating inefficiencies, and adopting new technologies, organizations can streamline their operations, reduce costs, and improve productivity. For instance, the integration of advanced technologies like automation, artificial intelligence, and data analytics can optimize decision-making processes, enhance customer service, and enable more efficient resource allocation. This operational excellence translates into higher profitability and a stronger competitive position in the market. Moreover, strategic business transformation fosters a culture of continuous improvement and innovation within the organization. As companies transform, they often instill a mindset of agility and adaptability among employees, encouraging them to embrace change and seek out new ways to improve their w1ork. This cultural shift not only supports the successful implementation of transformation initiatives but also drives long-term

organizational excellence by ensuring that the company remains responsive to emerging trends and challenges. Leadership plays a crucial role in driving organizational excellence through strategic transformation. Effective leaders articulate a clear vision and strategy, mobilize resources, and inspire employees to align their efforts with the organization's goals. This leadership commitment ensures that transformation initiatives are executed effectively and that the entire organization is engaged in the pursuit of excellence.

Furthermore, strategic transformation enables organizations to better meet customer expectations and deliver superior value. By transforming their business models, products, and services, companies can respond more effectively to customer needs, differentiate themselves from competitors, and build stronger customer loyalty. Strategic business transformation drives organizational excellence by enhancing operational efficiency, fostering a culture of innovation, enabling effective leadership, and improving customer satisfaction. It empowers organizations to thrive in dynamic environments and achieve long-term success.

Real-life examples of successful strategic business transformation include the essential tools for organizations seeking to achieve and sustain excellence in an increasingly competitive and fast-paced global market. These approaches enable companies to adapt to rapid changes, optimize processes, and innovate continuously, thereby enhancing overall performance and customer satisfaction. Through real-life examples and case studies, we can observe how

organizations have successfully implemented these strategies to drive organizational excellence. Therefore, the main case study examples for excellent strategic business transformation

1. One prominent example is **Amazon**, a company that has continuously evolved its business model and operations through strategic transformation and agile practices. By leveraging technology and data-driven insights, Amazon has optimized its supply chain, improved customer experience, and expanded its services beyond e-commerce into cloud computing and artificial intelligence. This transformation has enabled Amazon to maintain its position as a global leader and achieve sustained excellence.

2. Another case is **ING**, a Dutch multinational banking and financial services corporation. ING undertook a significant business transformation by adopting agile methodologies across its operations. The company reorganized its workforce into agile teams known as tribes and squads, which allowed for greater flexibility, faster decision-making, and a stronger focus on customer needs. This transformation not only enhanced ING's ability to innovate and deliver high-quality services but also improved employee engagement and organizational efficiency.

There are other reasons besides the grant examples mentioned above,

- Microsoft under the leadership of CEO Satya Nadella. When Nadella took over in 2014, Microsoft was struggling to keep pace with competitors in the rapidly evolving tech industry. Nadella embarked on a strategic transformation that focused on cloud computing, artificial intelligence, and a shift from a traditional software licensing model to a subscription-based model with services like Office 365 and Azure.

- Domino's Pizza. In the late 2000s, Domino's faced declining sales and customer dissatisfaction. The company undertook a strategic transformation that involved revamping its pizza recipe, investing in digital technology, and enhancing customer service. By embracing digital ordering and delivery innovations, Domino's not only improved its product but also streamlined its operations, resulting in significant growth and making it a leader in the fast-food industry.

- General Electric (GE) under former CEO Jack Welch. Faced with the challenge of maintaining competitiveness in a rapidly changing industrial landscape, GE underwent a comprehensive transformation that emphasized streamlining operations, adopting lean manufacturing principles, and

fostering a culture of continuous improvement.

- Welch implemented Six Sigma across GE's global operations, focusing on reducing defects and improving quality, which significantly enhanced operational efficiency and customer satisfaction. Moreover, GE's adoption of agile project development methodologies allowed the company to rapidly innovate and bring new products to market. This transformation not only improved GE's financial performance but also established the company as a leader in its industry.

- Another example is Netflix, which successfully transformed its business model from a DVD rental service to a global streaming platform. By leveraging agile project development, Netflix continuously adapted its technology and content strategy to meet changing consumer demands. The company's ability to innovate and scale quickly has driven its global success, demonstrating how strategic business transformation and agile methodologies can lead to organizational excellence.

These examples illustrate the profound impact that strategic transformation and agile development can have on achieving and sustaining excellence in today's competitive business environment.

9. AGILE PROJECT DEVELOPMENT

Agile project development is a methodology that emphasizes flexibility, collaboration, and customer-focused delivery in project management and software approaches, which often follow a rigid, sequential process, agile development is iterative, meaning that it progresses through small, incremental cycles known as sprints a specific set of tasks. Agile aims to produce a working product or component at the end of each sprint, allowing for continuous feedback, adjustments, and improvements throughout the project lifecycle.

The principles of agile project development are rooted in the Agile Manifesto, which outlines key values and principles to guide teams toward effective project delivery. These principles include prioritizing (or a viable product) rather than comprehensive documentation and fostering customer collaboration over contract negotiation. Additionally, agile emphasizes responding to change rather than strictly adhering to a plan, recognizing that requirements and market conditions can evolve throughout the project. This adaptability is crucial in today's fast-paced business environment, where the ability to pivot quickly can be a significant competitive advantage. By embracing these principles, organizations can drive innovation, enhance customer

satisfaction, and achieve greater organizational excellence.
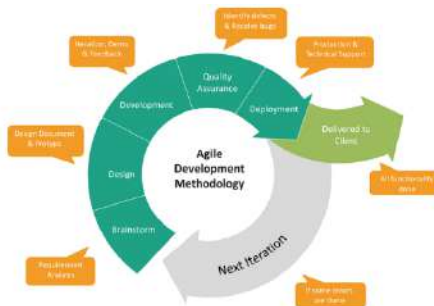
Figure 5. Agile development methodology

The process begins with requirement analysis, where the needs and objectives of the project are identified. This step involves gathering and understanding what the client or business stakeholders require from the project, ensuring that the development team is aligned with the end goals. This stage is crucial for generating ideas, identifying potential solutions, and planning the overall approach to the project. In this phase, the actual development of the project takes place. The development team builds the product based on the design specifications. This phase is highly collaborative and often involves continuous integration and testing to ensure quality. Once the product passes quality assurance, it is deployed. Deployment involves making the product available for use, either by the client or within the organization. This stage marks the transition from development to production. After deployment, the product enters the production phase, where it is used in real-world scenarios. Technical support is provided to address any issues or bugs that arise during production, ensuring smooth operation and user satisfaction. The final product, with all functionalities complete, is

delivered to the client. If there are no errors, the project is considered done. However, if errors are found, the process may loop back to earlier stages for additional iterations and fixes.

Within agile project development, several methodologies have been developed to help teams implement agile principles effectively. Scrum and Kanban are two of the most prominent methods, each offering unique approaches to managing and delivering projects flexibly and iteratively.

Scrum is one of the most widely adopted agile methodologies. It organizes work into short, time-boxed iterations called sprints, usually lasting two to four weeks. During each sprint, cross-functional teams work collaboratively to achieve specific objectives, delivering a potentially shippable product increment at the end. Scrum emphasizes roles such as the Product Owner, Scrum Master, and Development Team, each with distinct responsibilities. Key practices within Scrum include daily stand-up meetings, sprint planning sessions, sprint reviews, and retrospectives, which ensure ongoing communication, transparency, and continuous improvement. By breaking down projects into smaller, manageable chunks, Scrum enables teams to adapt quickly to changing requirements and maintain a steady pace of progress, ultimately contributing to organizational excellence. Scrum also incorporates several ceremonies, including **daily stand-ups** (short meetings to discuss progress), **sprint planning** (to set the goals for the sprint), **sprint reviews** (to showcase the completed work), and **retrospectives** These practices emphasize transparency, inspection, and adaptation,

allowing teams to stay aligned, and focused, and continually improve their processes, ultimately leading to more successful project outcomes.
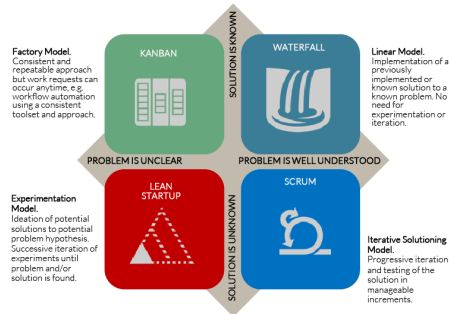
Figure 6. Different agile methodologies

Kanban, on the other hand, is a visual workflow management method that focuses on continuous delivery and efficiency in the flow of tasks through various stages of completion, from "To Do" to "In Progress" to "Done." Unlike Scrum, Kanban does not prescribe fixed-length sprints; instead, it allows for a more flexible and ongoing flow of work. Key principles of Kanban include limiting work in progress (WIP) to prevent bottlenecks, managing flow to ensure smooth progress, and making process policies explicit to foster a shared understanding among team members. Kanban's emphasis on visualization and flow optimization makes it particularly effective for improving efficiency and ensuring that resources are allocated effectively, driving continuous improvement and excellence within the organization. Kanban is particularly effective in environments where work priorities frequently shift, as it allows teams to adjust their workload dynamically without the constraints of predefined cycles. It is widely used in various industries,

including software development, marketing, and operations, for its simplicity, flexibility, and ability to improve efficiency while maintaining high-quality standards.

Both Scrum and Kanban provide valuable frameworks for implementing agile project development, but they cater to different needs and organizational contexts. Scrum is particularly well-suited for projects with a clear, evolving product vision and a need for regular, incremental deliveries. It fosters a disciplined approach to planning and review, which is ideal for teams that benefit from structured processes. Kanban, with its emphasis on visualization and flow management, is more adaptable to environments where work priorities can change rapidly and where continuous delivery is a priority. It is especially effective in operations or maintenance teams where the workload is ongoing and not easily segmented into discrete sprints. In the broader context of driving organizational excellence through strategic business transformation, both Scrum and Kanban play crucial roles. By enabling teams to work more efficiently, respond quickly to change, and continuously improve their processes, these methodologies help organizations achieve their strategic goals more effectively. Whether through the structured, iterative approach of Scrum or the flexible, flow-based management of Kanban, agile project development empowers organizations to remain competitive in a fast-paced, ever-changing business environment. Through the successful implementation of these agile methodologies, organizations can enhance innovation, improve customer satisfaction,

and achieve sustained excellence in their operations.

Agile project development offers numerous advantages that are crucial for promoting organizational excellence, one of the primary benefits of agile is its ability to enhance flexibility and responsiveness. Unlike traditional project management methodologies, which often follow rigid plans, agile allows teams to adapt quickly to changing market conditions, customer requirements, and technological advancements. This adaptability ensures that organizations can stay competitive and meet evolving demands without being constrained by fixed plans or timelines. Another significant advantage of agile project development is the focus on continuous improvement and iterative progress. Cycles where teams regularly review their work, gather feedback, and make necessary adjustments. This process of frequent reflection and refinement leads to better-quality outcomes and ensures that the final product or service aligns closely with the customer's needs and the organization's strategic goals. By fostering a culture of continuous improvement, agile helps organizations enhance their operational efficiency and drive excellence. Agile also promotes greater collaboration and communication within teams and across the organization.
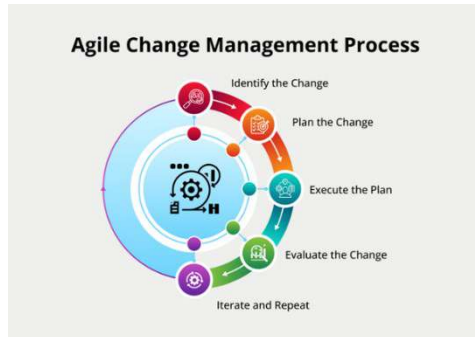
Figure 7. Agile change management process

Agile frameworks encourage daily stand-ups, sprint reviews, and retrospectives, which facilitate open communication and transparency faster decision-making, and a stronger alignment between the project team and the organization's overall objectives. Enhanced collaboration not only improves team dynamics but also ensures that everyone is working towards a common goal, which is essential for achieving organizational excellence. Furthermore, agile project development supports risk management by delivering work in small, manageable increments. This approach allows teams to identify potential risks early in the process and take corrective actions before they escalate. By mitigating risks proactively, organizations can avoid costly mistakes and ensure that their strategic initiatives are successfully executed, contributing to long-term excellence. Agile project development promotes organizational excellence by enhancing flexibility, fostering continuous improvement, encouraging collaboration, and improving risk management. These benefits make agile an invaluable approach for organizations undergoing strategic

business transformation, helping them achieve their goals more efficiently and effectively. In the context of strategic business transformation, the advantages of agile project development are particularly pronounced. As organizations transform, the ability to adapt quickly, collaborate effectively, and deliver high-quality results becomes even more critical. Agile project development provides the tools and processes needed to navigate the complexities of transformation, ensuring that the organization can achieve its strategic goals and maintain a competitive edge in the market.

Agile frameworks like Scrum and Kanban promote frequent and open communication among team members, stakeholders, and customers. This collaborative environment ensures that everyone involved in the project is aligned with the goals and understands the progress being made. Regular meetings, such as daily stand-ups and sprint reviews, provide opportunities for feedback and adjustments, reducing the risk of miscommunication and ensuring that the project remains on track. This close collaboration leads to higher quality outcomes, as issues can be identified and addressed promptly, and the final product is more likely to meet or exceed customer expectations. Another significant advantage of Agile frameworks like Scrum and Kanban promote frequent and open communication among team members, stakeholders, and customers. This collaborative environment ensures that everyone involved in the project is aligned with the goals and understands the progress being made. Regular meetings, such as daily stand-ups and sprint reviews,

provide opportunities for feedback and adjustments, reducing the risk of miscommunication and ensuring that the project remains on track. This close collaboration leads to higher quality outcomes, as issues can be identified and addressed promptly, and the final product is more likely to meet or exceed customer expectations. Agile project development also supports **incremental and iterative progress**, which is a key driver of organizational excellence. Agile teams can deliver functional components of the product or service at regular intervals. This approach allows for continuous delivery of value to customers, who can provide feedback early and often. The iterative nature of agile development means that each sprint builds on the previous one, with lessons learned being applied to subsequent iterations. This continuous refinement process leads to higher-quality deliverables and reduces the likelihood of costly rework at later stages.

Therefore, present examples for Several organizations that have successfully implemented agile project development as part of their strategic business transformation, leading to significant improvements in organizational excellence. These examples highlight how agile methodologies have enabled enhanced collaboration, and deliver value more efficiently.

1. Spotify Embracing Agile to Foster Innovation and Organizational Excellence

Spotify, the global music streaming giant, is one of the most well-known examples of an

organization that has successfully implemented agile project development. To scale its operations and foster a culture of innovation, Spotify adopted the "Spotify Model," which is a unique take on agile methodology. This model involves breaking down the organization into smaller, autonomous teams or services. Squads operate with a high degree of independence, allowing them to experiment, innovate, and rapidly respond to changes in the market or customer needs. Spotify also introduced "tribes," "chapters," and "guilds" to ensure collaboration and knowledge sharing across squads, without sacrificing agility. This structure allows Spotify to maintain flexibility while scaling its operations, leading to continuous improvement and innovation. The adoption of this agile framework has been instrumental in Spotify's ability to continuously release new features, and improve user experience, The agile approach has not only driven operational excellence but also fostered a culture of innovation and responsiveness, key components of organizational excellence.

2. ING Bank: Transforming Traditional Banking with Agile

ING Bank, a major Dutch multinational banking and financial services corporation, is another example of a successful agile transformation. In 2015, ING embarked on a comprehensive transformation journey, shifting from a traditional, hierarchical structure to an agile organization. The goal was to enhance customer satisfaction, improve efficiency, and accelerate innovation in response to the rapidly changing financial landscape. ING adopted a similar approach to Spotify, reorganizing its workforce into cross-functional squads, each focused on specific customer segments or products. These squads were empowered to make decisions, prioritize tasks, and deliver value to customers more rapidly. The transformation also involved significant changes in leadership roles, with leaders transitioning from decision-makers to facilitators who empower teams.

The agile transformation at ING led to a significant improvement in customer satisfaction, as evidenced by higher Net Promoter Scores (NPS). Additionally, the bank saw products and services, increased employee engagement, and greater alignment between the organization's strategic goals and day-to-day operations. This case highlights how agile project development can be effectively leveraged in a traditionally conservative industry to drive organizational excellence.

3. Microsoft: Agile Transformation to Enhance Innovation and Speed

Microsoft, under the leadership of CEO Satya Nadella, successfully implemented agile project development as part of its broader strategic business transformation. When Nadella took over in 2014, he recognized the need for Microsoft to become more agile and innovative to compete in the fast-paced tech industry. To achieve this, Nadella promoted a culture shift towards agility, emphasizing the importance of continuous learning, collaboration, and customer-centricity. One of the key areas where Microsoft implemented agile methodologies was in its product development processes. Teams adopted

agile frameworks such as Scrum and Kanban, allowing them to work in short, iterative cycles, deliver incremental improvements, and rapidly respond to customer feedback. This shift enabled Microsoft to accelerate the development and release of products, such as Azure and Office 365, which have become central to the company's success. The agile transformation also extended to how Microsoft manages its cloud services, with teams empowered to make quick decisions and iterate on their work based on real-time data and customer insights. This approach has driven innovation, improved product quality, and significantly enhanced customer satisfaction. Microsoft's successful adoption of agile project development is a testament to how agility can be a catalyst for organizational excellence, in the technology sector.

4. Bosch Agile Transformation in a Manufacturing Giant

Bosch, a global engineering and drive innovation and maintain its competitive edge in the rapidly evolving automotive and industrial technology sectors. Bosch faced the challenge of adapting to the increasing pace of technological change, particularly in areas such as the Internet of Things (IoT) and autonomous vehicles. To address these challenges, Bosch adopted agile methodologies across its development teams. By implementing agile frameworks like Scrum and establishing cross-functional teams, Bosch was able to accelerate its product development processes and improve collaboration across different departments. This transformation allowed Bosch to bring new, innovative products to market faster,

while also ensuring higher quality and customer satisfaction. One notable example of Bosch's agile success is in the development of its IoT solutions. Agile practices enabled Bosch teams to iterate quickly, test new ideas, and incorporate customer feedback into their products. This approach has been key to Bosch's ability to lead in the IoT space, offering cutting-edge solutions that meet the needs of an increasingly connected world. The agile transformation at Bosch demonstrates how even large, established companies can leverage agile methodologies to drive organizational excellence and stay ahead of the competition.

These case studies highlight how organizations across different industries have successfully implemented agile project development to drive strategic business transformation and achieve organizational excellence. Whether it's Spotify's innovative approach to team structure, ING's reimagining of banking operations, Microsoft's agility in technology development, or Bosch's adaptation in manufacturing, agile methodologies have proven to be a powerful tool in fostering innovation, improving efficiency, and maintaining a competitive edge. These examples underscore the importance of agility.

10. INTEGRATION OF STRATEGIC BUSINESS TRANSFORMATION & AGILE PROJECT MANAGEMENT

Figure 8. Advantages of an integrated management system

The integration of Strategic Business Transformation and Agile Project Development represents a modern approach to achieving organizational excellence in a rapidly changing business environment. Strategic Business Transformation involves a comprehensive and often radical realignment of an organization's operations, structure, and culture to align with long-term goals and market demands. It is a process that sets the stage for sustainable success by defining a clear vision and strategic objectives. Agile Project Development, on the other hand, focuses on flexibility, iterative progress, and stakeholder collaboration, enabling organizations incrementally. When these two approaches are combined, they create a powerful synergy that allows organizations to be both visionary and adaptable. Strategic Business Transformation provides the roadmap and long-term direction, while Agile Project Development ensures that the journey is flexible, responsive, and continuously aligned with emerging needs. This integration not only enhances the efficiency and effectiveness of business transformations but also ensures that

organizations remain resilient and competitive in an ever-evolving marketplace. In this context, understanding how to effectively merge these methodologies is critical for organizations aiming to achieve and sustain excellence.

- Enhancing Organizational Excellence through Integration

Enhancing organizational excellence through the integration of Strategic Business Transformation and Agile Project Development is an innovative approach that equips organizations to thrive this integration leverages the strengths of both methodologies Strategic Business Transformation, which provides a clear vision and long-term goals, and Agile Project Development, which emphasizes flexibility, iterative progress, and rapid adaptation. When combined, these approaches create a dynamic framework that drives continuous improvement and fosters a culture of innovation and responsiveness, ultimately leading to organizational excellence. Strategic Business Transformation is a holistic process that involves reevaluating and realigning an organization's core operations, structures, and culture to meet evolving market demands and achieve long-term objectives. It typically encompasses changes in leadership, technology, processes, and even the organization's overall mindset. The goal is to position the organization to capitalize on new opportunities, mitigate risks, and maintain a competitive edge. However, the success of such transformations often hinges on the organization's ability to implement changes effectively and adapt to unforeseen challenges along the way. This is where

Agile Project Development plays a crucial role. Agile methodologies are designed to deliver value incrementally, allowing organizations to implement changes in small, manageable phases. This iterative approach not only reduces the risks associated with large-scale transformations but also ensures that each step of the process is aligned with the overall strategic vision. By incorporating regular feedback loops and fostering close collaboration among cross-functional teams, Agile Project Development allows organizations to adjust their strategies in real time based on feedback from stakeholders, market changes, or internal insights. This level of flexibility is essential for maintaining momentum and ensuring that the transformation remains relevant and effective throughout its implementation. The integration of these two methodologies creates a synergy that enhances organizational excellence by ensuring that strategic goals are not only well-defined but also achievable and adaptable. Strategic Business Transformation provides the long-term direction and overarching goals, while Agile Project Development focuses on the practical, day-to-day execution of these goals. Together, they create a balanced approach that allows organizations to pursue ambitious transformations without sacrificing flexibility or responsiveness.

For example, a company undergoing digital transformation may set up a strategic Agile Project Development team that would then work on specific projects, such as developing new digital products or optimizing existing services, ensuring that each iteration of their work contributes directly to the broader strategic objectives. This approach allows the organization to continuously refine its strategies and operations By encouraging regular reflection, feedback, and adaptation, organizations can foster a mindset of innovation and learning, which is critical for sustaining excellence in the long term. Employees become more engaged and aligned with the organization's strategic goals, leading to higher levels of productivity, creativity, and overall performance. The integration of Strategic Business Transformation and Agile Project Development is a powerful approach to enhancing organizational excellence. It combines the visionary aspects of strategic planning with the practical, adaptive strengths of agile methodologies, creating a framework that is both robust and flexible. This integrated approach not only drives successful transformations but also ensures that organizations remain resilient, competitive, and capable of achieving sustained excellence in an ever-changing business landscape.

- Synergies between Strategic Business Transformation and Agile Project Development

The synergies between Strategic Business Transformation and Agile Project Development are crucial in driving organizational excellence, particularly Strategic Business Transformation provides the overarching framework and vision needed for long-term success, focusing on the alignment of organizational resources, capabilities, and processes with future market demands and internal goals. It often involves significant changes in business

models, operations, and culture, aiming to position the organization for sustained competitive advantage. However, the effectiveness of this transformation largely depends on how well it is executed and adapted over time, which is where Agile Project Development plays a pivotal role. Agile Project Development is inherently flexible and iterative, designed to manage and implement complex projects in a way that allows for continuous feedback and rapid adjustments. This methodology ensures that the transformation process is not only guided by strategic objectives but also responsive to real-time challenges and opportunities. By breaking down large transformation initiatives into smaller, more manageable projects or sprints, Agile allows organizations to test, learn, and adapt their strategies on the go by enabling organizations to make incremental improvements and course corrections based on actual performance data and stakeholder feedback.

The synergy between these two approaches lies in their complementary nature. Strategic Business Transformation sets the long-term vision and goals, ensuring that all Agile projects are aligned with the broader organizational objectives. At the same time, Agile Project Development injects flexibility and speed into the transformation process, allowing for timely adjustments and the continuous delivery of value. This combination ensures that strategic initiatives remain relevant and effective, even as the business landscape shifts. For example, a company undergoing digital transformation may use Strategic Business Transformation to set its long-term goal of becoming a

digital leader. Agile Project Development teams can then be tasked with specific initiatives, such as developing new digital products or optimizing customer experiences, ensuring that each project aligns with the overall digital strategy. The iterative nature of Agile allows these teams to quickly adapt to new technologies or market feedback, ensuring that the strategic goals are met efficiently and effectively.

- Framework for Integration

A robust framework for integrating Strategic Business Transformation and Agile Project Development is essential for the business environment. This integration begins with **strategic alignment**, ensuring that all agile initiatives are directly linked to the organization's overarching strategic goals. Clear communication of strategic objectives across all levels of the organization ensures that every agile project contributes to the larger transformation vision. Regular reviews and adjustments to these objectives keep the transformation on track, allowing agile teams to stay focused on delivering value that aligns with the broader goals. The next component is **iterative implementation**, where the transformation strategy is broken down into smaller, manageable projects or phases. Agile Project Development methodologies, such as Scrum or Kanban, are employed to manage these phases, allowing for rapid development, testing, and iteration. Each phase delivers measurable outcomes that contribute to the overall transformation, ensuring continuous progress toward the strategic goals.

1. **Continuous feedback and adaptation** are a critical aspect of

this framework. By establishing mechanisms for real-time feedback from stakeholders—such as customers, employees, and leadership—the organization can quickly adapt both the strategic plan and project execution. This agility ensures that the transformation remains relevant and effective, even as external conditions change.

2. **Cross-functional collaboration** is another vital element, promoting synergy between different departments and teams. This collaboration ensures that the strategic vision is implemented consistently across the organization, with each team contributing its expertise to the transformation process.

Finally, **leadership and governance** play a crucial role in this integration. Leaders must understand both strategic and agile methodologies, guiding the organization through the transformation while empowering teams to innovate within the strategic framework. Effective governance structures ensure accountability, resource allocation, and alignment with the strategic vision, driving organizational excellence through a seamless integration of Strategic Business Transformation and Agile Project Development. Integrating Strategic Business Transformation with Agile Project Development enables organizations to navigate complex changes effectively while maintaining a focus on long-term goals. By leveraging the strengths of both approaches, organizations can achieve enhanced agility,

better alignment with market demands, and ultimately, greater organizational excellence. This integrated approach not only drives successful transformations but also ensures that organizations remain adaptable and competitive in an ever-changing business landscape.

11. CASE STUDY

General Electric (GE) offers a compelling case study of driving excellence through Strategic Business Transformation and Agile Project Development. Faced with the challenge of staying competitive in a rapidly evolving industrial landscape, GE embarked on a digital transformation journey, shifting from a traditional manufacturing giant to a digital industrial company. GE adopted agile methodologies across its operations, particularly in the development of its Predix platform, an industrial IoT solution. By implementing Agile Project Development, GE was able to accelerate innovation cycles, improve product development speed, and enhance customer responsiveness.

Another example is **Fidelity Investments**, a financial services firm that recognized the need to transform its business to better serve digital-native customers. Fidelity integrated strategic business transformation with agile practices to revamp its product offerings and customer experience. The organization faced challenges in shifting its legacy systems and culture but overcame these by adopting agile frameworks, empowering cross-functional teams, and continuously iterating on customer feedback. These transformations led to significant outcomes. GE's digital initiatives opened new revenue streams and positioned the company as a

leader in industrial IoT. Fidelity, on the other hand, improved its market responsiveness and customer satisfaction, reinforcing its position in a competitive financial services market. Both cases demonstrate how integrating strategic transformation with agile practices can drive organizational excellence.

Organizations that embark on Strategic Business Transformation and Agile Project Development often face significant challenges, including resistance to change, the complexity of aligning agile practices with long-term strategic goals, and the difficulty of maintaining flexibility in large-scale operations. Resistance to change is a common issue, as employees and management may be reluctant to shift from established processes to more dynamic and iterative methods. To overcome this, successful organizations invest in change management strategies, including comprehensive training, clear communication of the transformation's benefits, and involving employees in the change process to foster ownership and commitment. Aligning agile practices with overarching strategic goals can also be challenging, especially in large organizations with diverse objectives. Overcoming this requires a strong leadership vision that links agile projects to the company's strategic direction. Regular reviews and adaptive planning ensure that agile teams remain focused on contributing to long-term goals, even as they operate with flexibility. Maintaining flexibility while scaling agile practices across the organization is another significant challenge. This can be addressed by creating cross-functional teams and implementing a governance structure that balances autonomy with accountability. By decentralizing successfully integrate agile methods with strategic transformation, ultimately driving organizational excellence.

- Benefits and outcomes achieved

The integration of Strategic Business Transformation and Agile Project Development has led to significant outcomes and benefits for organizations that successfully implement these approaches. One of the most notable outcomes is enhanced organizational agility, through the iterative nature of Agile Project Development, which promotes continuous improvement and flexibility, enabling organizations to pivot strategies without losing momentum. Another key benefit is improved alignment between strategic goals and day-to-day operations. By breaking down long-term strategic objectives into manageable, short-term projects, organizations ensure that every effort directly contributes to the overall vision. This alignment fosters a more focused and efficient organization, where resources are optimized, and efforts are consistently directed toward achieving strategic outcomes.

Furthermore, organizations often experience increased innovation as a result of this integration. Agile methodologies encourage experimentation and rapid prototyping, which leads to the development of innovative solutions and new business models. This culture of innovation not only drives growth but also enhances the organization's competitive edge in the

market. The combination of strategic transformation and agile practices leads to higher employee engagement and satisfaction. Employees are more involved in decision-making processes and can see the direct impact of their work on the organization's success. This empowerment leads to a more motivated and productive workforce, contributing to the overall excellence of the organization.

12. RESULTS AND DISCUSSIONS

The research on driving organizational excellence through Strategic Business Transformation and Agile Project Development has yielded several key findings that significantly One of the most critical findings is that the integration of strategic transformation with agile methodologies enables organizations to maintain a competitive edge in rapidly changing environments. By aligning long-term strategic goals with agile project execution, organizations can ensure that their strategic objectives are not only met but also enhanced by the flexibility and responsiveness that agile practices bring. This alignment results in a more adaptive organization, capable of responding to market shifts and technological advancements with agility. The study also highlights the importance of leadership and vision in successfully implementing both strategic transformation and agile project development. Effective leadership is crucial in guiding the organization through the complexities of change, ensuring that all stakeholders are aligned with the strategic goals and that agile practices are effectively integrated into the organizational culture.

This finding contributes to the existing literature by emphasizing the role of leadership not just in setting strategic direction but also in fostering a culture that supports agility and continuous improvement.

The findings from this research on Driving Organizational Excellence through Strategic Business Transformation and Agile Project Development significantly enrich the existing body of knowledge by highlighting the synergy between strategic and agile methodologies. Traditionally, strategic business transformation has been seen as a top-down, long-term initiative, while agile project development is often viewed as a bottom-up, iterative process. This study bridges these perspectives by demonstrating how their integration can create a dynamic, responsive organization that aligns strategic goals with operational execution. The research culture embraces both strategic foresight and agile adaptability, contributing to the understanding of how organizations can remain competitive in fast-evolving markets. Furthermore, the emphasis on employee engagement and empowerment adds depth to the literature, illustrating how agile practices not only enhance productivity but also drive innovation and organizational commitment. These insights expand the current understanding of how strategic transformation and agile practices can be effectively combined to achieve sustained organizational excellence, providing a more holistic view of organizational development in contemporary business environments.

The implications of these findings for practitioners and organizations are profound. For organizations, the integration

of strategic business transformation with agile project development offers a pathway to achieving sustainable excellence. By adopting these approaches, organizations can become more resilient, innovative, and customer-focused. Practitioners, particularly those in leadership roles, must prioritize the alignment of strategic goals with agile practices and foster a culture that supports continuous learning and adaptability. This approach not only enhances organizational performance but also ensures that the organization remains competitive in a dynamic business landscape. The integration of Strategic Business Transformation and Agile Project Development carries significant implications for both practitioners and organizations. For practitioners, particularly leaders and managers, it necessitates a shift in mindset towards embracing flexibility, continuous improvement, and a more collaborative approach to achieving strategic goals. Practitioners must develop skills in both strategic thinking and agile methodologies, ensuring that they can guide their teams through iterative processes while keeping the broader organizational vision in focus.

For organizations, the implications are equally profound. Embracing these integrated approaches means fostering a culture that values adaptability, innovation, and employee empowerment. Organizations to equip their teams with the necessary skills and must be prepared to adjust traditional structures and processes to support agile practices. Additionally, the alignment of strategic transformation with agile project development enables organizations to respond more swiftly to market changes,

maintain a competitive edge, and achieve sustainable growth. Overall, the integration of these strategies drives organizational excellence by creating a more resilient, innovative, and customer-focused organization, capable of thriving in an increasingly dynamic business environment. However, the study also acknowledges certain limitations. One significant limitation is the potential for resistance to change, particularly in organizations with deeply entrenched processes and cultures. The transition to agile practices and the adoption of strategic transformation initiatives requires significant cultural shifts, which can be challenging to implement. Additionally, while the study highlights the benefits of integrating strategic transformation with agile project development, it may not fully capture the nuances of how these approaches must be tailored to fit different organizational contexts. The effectiveness of these strategies may vary depending on the industry, organizational size, and existing cultural factors. Another limitation is the scope of the study, which primarily focuses on the benefits of integration without delving deeply into the potential challenges or drawbacks. Future research could explore these challenges in greater detail, providing a more comprehensive understanding of the factors that influence the successful implementation of strategic transformation and agile practices. Second, the study focuses on organizations that have successfully implemented these strategies, potentially introducing a success bias. This focus may overlook the challenges or failures that other organizations encounter when attempting similar transformations,

thereby providing an incomplete picture of the complexities involved.

In conclusion, the research provides valuable insights into how organizations can achieve excellence by integrating strategic business transformation with agile project development. While the study has certain limitations, its implications for practitioners and organizations are significant, offering a roadmap for navigating the complexities of the modern business environment and achieving long-term success.

13. CONCLUSION

This paper has examined the vital interplay between Strategic Business Transformation and Agile Project Development in fostering organizational excellence. Strategic business transformation offers a comprehensive approach to reshaping organizational structures, processes, and goals to align with long-term objectives and market demands. Simultaneously, agile project development brings flexibility, iterative progress, and continuous improvement to the forefront of project execution. The integration of these two approaches creates a powerful synergy, enabling organizations to be both visionary and adaptable By aligning strategic goals with agile methodologies, organizations not only enhance operational efficiency but also foster innovation, resilience, and sustained competitive advantage. This dual approach ensures that long-term strategic visions are realized through practical, responsive actions, driving overall excellence in organizational performance.

Strategic business transformation and agile project development are crucial drivers of organizational excellence in today's dynamic business environment. Strategic business transformation provides organizations with the necessary framework to realign their goals, processes, and structures to adapt to evolving market conditions and long-term objectives. It enables organizations to remain competitive by fostering innovation, optimizing operations, and ensuring that all aspects of the business are aligned with its strategic vision. Agile project development complements this transformation by introducing a flexible and iterative approach to project management. This methodology allows organizations to respond quickly to changes, prioritize tasks effectively, and continuously improve their processes. By integrating agile practices into strategic business transformation, organizations can achieve a balance between long-term planning and short-term adaptability, ensuring that their strategic goals are met through efficient and responsive project execution. Together, these approaches drive organizational excellence by enabling businesses to innovate, adapt, and thrive in a rapidly changing environment. They ensure that organizations are not only prepared for the future but are also equipped to lead in their respective industries, achieving sustained success and growth.

Future research in the area of driving organizational excellence through strategic business transformation and agile project development could focus on several key areas. First, there is a need for empirical studies that explore how different industries and organizational contexts impact the integration of these two approaches. Understanding how various sectors adapt

and apply strategic transformation alongside agile practices would provide valuable insights into tailoring these methodologies to meet specific industry challenges. Lastly, there is a need to examine the long-term impacts of integrating strategic business transformation with agile project development. While this study has provided a snapshot of the benefits, future research could track the outcomes over an extended period to assess sustainability and continuous improvement. Additionally, exploring the role of technology and digital tools in facilitating this integration would be a valuable contribution to the field, given the growing importance of digital transformation in business strategy. Second, future research could investigate the resource implications of implementing strategic transformation and agile development. This includes exploring the time, cost, and human capital required for successful integration, which is crucial for organizations to plan and manage these processes effectively. Additionally, examining the role of technology digital tools in facilitating the integration of strategic business transformation and agile project development is an area ripe for exploration. As digital transformation becomes increasingly integral to business strategy, understanding how digital tools can enhance the alignment between strategic objectives and agile practices could provide significant benefits.

Finally, long-term studies that track the sustainability and continuous improvement of organizations using this integrated approach would offer deeper insights into its lasting impact on organizational excellence.

This research could help refine the strategies and frameworks for organizations seeking to maintain excellence over time.

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Metaverse and Business Performance: Future Implications

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ABSTRACT

The Metaverse, a virtual reality space that integrates the real and virtual worlds, is rapidly gaining traction in the business world as companies explore innovative ways to enhance their performance in immersive environments. Businesses are leveraging the Metaverse to introduce new business models, enhance organizational efficiency, and provide personalized services to meet segmented market demands, ultimately aiming to drive growth and performance. The Metaverse presents organizations with opportunities to enhance internal communications, adapt quickly to changes, and develop key competencies and driving performance. This conceptual paper aims to review the literature on the impact of Metaverse on organizational performance, focusing on how these platforms provide efficiency and productivity to enhance business performance in every aspect and to recommend future research directions by identifying research gaps. The PRISMA framework was utilized in a rigorous review procedure to ensure a thorough analysis of the current findings. The study performs keyword co-occurrence analysis by using the VOSviewer software. All articles were obtained from the Scopus database to ensure high-quality information. The findings of this study identified that companies are building flexible and productive organizational systems by promoting digital transformation through the Metaverse by introducing innovative business models. Three clusters relating to the keywords associated with the area of concern were found via keyword co-occurrence analysis. The analysis indicates that while other keywords produced in the investigation have received more attention than machine

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learning, artificial intelligence, deep learning, immersive, and algorithm, these terms have not. Future research should also focus on utilizing Metaverse and the latest technologies for their organizations to enhance business performance, as limited evidence is currently available on the concept of Metaverse and business performance.

***Keywords* - Metaverse, Business Performance, Future Research Avenues**

1. INTRODUCTION

In contemporary densely populated and intensely competitive commercial environments, organizations perpetually engage in the exploration of innovative methodologies to enhance their business performance and expand their market presence (Sharma et al., 2024). The notion of the Metaverse, which denotes a virtual reality ecosystem facilitating user connectivity through immersive experiences, has experienced considerable traction in recent years. This swift expansion is predominantly propelled by an increasing focus on digital engagements and relentless technological advancements. Consequently, organizations are progressively investigating the Metaverse as a medium for innovating business models and organizational frameworks, with the objective of augmenting operational efficiency and overall performance.

As the Metaverse market has experienced rapid expansion, the demographic of users has also increased significantly. Organizations are engaging in digital transformation initiatives to sustain their operations in light of the swift alterations in the external environment instigated by the several issues. In essence, organizations are formulating strategies that can facilitate seamless business transactions through the utilization of digital technologies, even while facing limitations imposed by supply chain constraints and the optimization of human resource deployment. The Metaverse enhances the efficiency of business interactions among organizational members, fortifies unity among colleagues through an enhanced sense of virtual presence, and contributes to overall workplace satisfaction with a business performance enhancement (Hwang et al., 2022).

One of the objectives of digital transformation is to enhance the operational efficacy of an organization through, among various factors, the implementation of digital technologies (Smith & Lamprecht, 2024). For small and medium-sized enterprises (SMEs), the prospects offered by the Metaverse present both exhilarating opportunities and intricate challenges (Gil-Cordero et al., 2023). These enterprises are beginning to contemplate how the integration of Metaverse technologies could enhance their business strategies and optimize critical performance indicators. This emphasizes the significance of embracing novel strategic paradigms and pragmatic insights to leverage the Metaverse for enhancing business expansion and diversification. Via the innovation of business models, which entails the implementation of appropriate strategies and initiatives directed towards fortifying stability, creating value, and guaranteeing customer satisfaction and business performance across diverse sectors (Beheshti et al., 2024).

The integration of Metaverse technologies into business operations transcends mere technical enhancement; it signifies a paradigmatic transformation in the manner in which businesses function and interact with stakeholders. On one hand, the Metaverse provides unprecedented avenues for organizations to elevate customer experiences, streamline operational processes, and generate novel revenue streams. For instance, virtual retail outlets within the Metaverse could enable organizations to access a global market without necessitating a physical presence, thereby diminishing overhead expenditures while broadening market access. Moreover, the immersive characteristics of the Metaverse can cultivate enhanced customer engagement through tailored and interactive experiences, potentially resulting in increased customer satisfaction and loyalty.

Nonetheless, the implementation of Metaverse technologies is fraught with challenges. Organizations must traverse a convoluted landscape of technological integration, data privacy dilemmas, and the requirement for substantial investments in both time and resources. A successful transition to the Metaverse necessitates a thorough comprehension of the technology and its prospective implications for business outcomes. This encompasses assessing the organization's readiness to adopt such technologies, the compatibility of existing systems, and the potential risks associated with such a transition.

Empirical investigations underscore that the propensity of organizations to adopt the Metaverse is shaped by various determinants, including effort expectancy, performance expectancy, and overall business satisfaction. Effort expectancy pertains to the perceived simplicity of utilizing the technology, while performance expectancy corresponds to the anticipated advantages it can confer upon the business. Additionally, overall contentment with the existing technological capabilities of the business plays a pivotal role in the decision-making continuum (Gil-Cordero et al., 2023).

There is a dearth of studies conducted related to Metaverse and Business Performance, Therefore, it is a timely requirement to revisit and review the current literature in such a way that future researchers are provided guidance towards possible paths that research can be conducted. Therefore, the main objectives of this study are to systematically review the current literature related to Metaverse and Business Performance and provide future research avenues to potential researchers.

2. METHODOLOGY AND EXPERIMENTAL DESIGN

In accordance with the recommendations made by Dogra and Priyashantha (2023), the PRISMA framework was utilized in the process of conducting the Systematic Literature Review (SLR). In total, 64 papers were retrieved from the Scopus database by employing the keywords "Metaverse" and "Business Performance" in the search. In compliance with the PRISMA criteria, the process for the review has been devised. The VOSviewer software, version 1.6.20, was utilized in order to carry out an investigation into the co-occurrence of keywords.

For the purpose of analyzing and selecting publications, this inquiry made use of the PRISMA methodology and framework, which was outlined by Dogra and Priyashantha (2023). The objective of the study was to conduct a comprehensive review of the existing body of literature concerning Metaverse and Business Performance, as well as to suggest potential directions for further research in this area. At the beginning of this research project, a strategy was put into place to systematically structure this review. This procedure was implemented using the PRISMA technique. Search terms, criteria for article inclusion, analysis tools, and a reporting framework are all included in the procedure that is explained below. The implementation of the PRISMA guideline is strongly recommended for systematic reviews due to the fact that it successfully reduces the amount of bias that occurs during the process of picking publications, organizing data, and publishing the results of studies. There are three main processes that are included in the PRISMA flow diagram for article selection. These stages are "identification, screening, and inclusion." It is of the utmost importance to choose proper search terms, criteria, and databases during the identification phase (Priyashantha et al., 2023).

There are four separate procedures that are included in the PRISMA article selection flow diagram as per the figure 1. These processes are identification, screening, eligibility, and inclusion. The method of selecting the items was carried out in accordance with these stages (Priyashantha et al., 2023b). "Metaverse" and "Business Performance" were the search terms that

were utilized. A combination of automatic and manual screening methods was utilized in order to exclude elements that were deemed to be irrelevant throughout the process of filtering through the articles. This analysis focused primarily on journal papers that were written in the English language and were entirely authored in that language. According to Priyashantha et al. (2023), systematic reviews provide a substantial endorsement for the utilization of journal articles due to the perceived dependability of these papers.
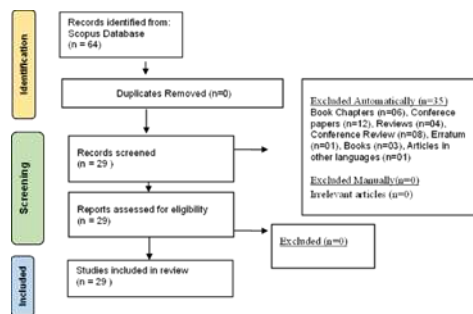
Figure 1 Prisma Flow Diagram

Article selection method	PRISMA guidelines
Search strings	Metaverse, Business Performance
Inclusion criteria	1. Year range: 2008 - 2024
	2. Subject area: All
	3. Language of article: English
	4. Keywords: Included All
	5. Source type: Academic Journals
	6. Type of Study: Empirical
	7. Methodological quality: Quantitative and Qualitative
Databases	Scopus
Analysis Method	Keyword co-occurrence analysis
Reporting structure	PRISMA guidelines
search criteria	"Metaverse" AND "Business Performance"
Whom do the screening and eligibility checking?	Authors have screened independently

Figure 2 Review Protocol

3. RESULTS AND DISCUSSION

On the basis of the interrelationships between the keywords, VOSviewer software has grouped them into three distinct groups (Fig. 3). In order to visually differentiate clusters, separate colors are used. These colors symbolize the links that exist between the terms that are contained within each cluster.
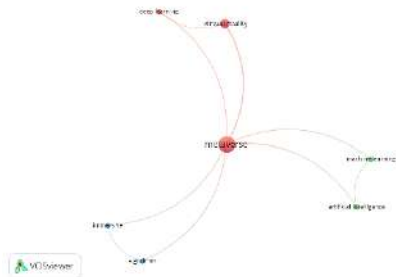
Figure 3 Network Visualization Map of Keywords

During the inquiry, a bibliometric approach was applied, and the VOSviewer software (Version 1.6.20) was utilized to carry out a term co-occurrence analysis. The purpose of this research was to investigate the connections that exist between phrases and produce a visual representation of those connections through the application of a technique known as "keyword co-occurrence network visualization." It is possible that establishing a linkage between phrases in the display of the term co-occurrence network could reveal significant insights into the text. VOSviewer is a piece of software that generates a network in a two-dimensional space and uses association strength normalization as its default setup. Nodes that indicate terms with strong links are positioned in close proximity to one

another in this region, whereas nodes that suggest terms with weaker connections are positioned further than one another. The software known as VOSviewer organizes nodes inside a network into clusters, bringing together nodes that have a substantial link with one another. In order to visually indicate the cluster that is associated with a node, the VOSviewer application makes use of colors. According to Dogra and Priyashantha (2023), a cluster can therefore be used as a sign of a common theme as well.

The network visualization map illustrates the relationship between the keywords, which reveals that there is a dearth of research connecting similar keywords that are associated with this location. As seen in table figure 3, the analysis only produces three clusters (Red, Blue and green), which is another point of interest. A cluster points to a recurring topic or idea.
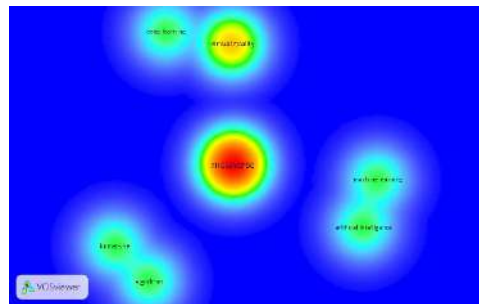
Figure 4. Density Visualization Map of Keywords

A density visualization map was created with the help of the VOSviewer program in order to locate places that had not been thoroughly studied. According to the user manual for the VOSviewer program, the keyword density visualisation map has a predetermined color scheme that spans from

blue to green to red. This color scheme begins with blue and ends with red. It can be observed that the intensity of the colors is directly related to the number of keywords that are present in the proximity. When compared to green keywords, blue keywords indicate a comparatively low frequency of occurrence, while green keywords indicate a moderate frequency of occurrence. In light of this, sentences that were situated within the blue and green sections were considered to be in unusual placements. According to Dogra and Priyashantha (2023), the utilization of co-occurrence density visualization is employed in order to indicate areas that demand additional research.

According to the density visualization map, the keywords that are located in the yellow and green areas have only been subjected to a limited number of exams, which highlights the necessity of conducting additional research. In addition to this, it suggests that the knowledge of these particular concepts is fairly limited, which consequently presents a wealth of opportunities for conducting research in this particular subject. Consider, on the other hand, the possibility that the keywords are situated within a zone that is colored red. Taking into consideration the circumstances, there has already been extensive research conducted in that particular subject, and there is a substantial amount of knowledge that is effortlessly available (Dogra & Priyashantha, 2023). Therefore, future research should focus on conducting research related to the keywords, machine learning, artificial intelligence, deep learning, immersive and algorithm as far as the context of Metaverse and Business Performance is concerned.

The bibliographic coupling graph for country-wise article publishing has been presented in Figure 5, along with the relationship between the two. The number of countries that have published in this field is quite low, and there is room for more nations to carry out research and publish in this field. Metaverse and Business Performance have been a recent popular inquiry by the academics and the research gap in this subject might be closed by undertaking additional studies in this area.
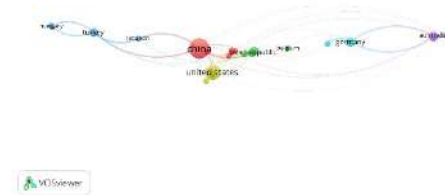
Figure 5. Country wise Publication Analysis

Country wise article publication graph shows that the United States and China are leading the way of making publications in the field and future researches in the other countries may conduct more research in this field especially, in the Sri Lanka context where the country is moving towards an economic recovery and development effort while keeping up with the global industry and research trends.

3.1 Future Research Directions

The main keywords revealed in this study, which could create potential research avenues are machine learning, artificial intelligence, deep learning, immersive and

algorithm. Study revealed 3 clusters of keywords which are connected to each other while indicating common themes. Future research may bombard at further investigations into themes and inter and intra relationships between these clusters.

This paper focuses on future research gaps including how businesses can utilize the Metaverse for their operations, and analyze the impact on overall business performance. Evaluate the legal and ethical challenges associated with Metaverse adoption in business operations that impact performance outcomes. Investigation of how organizations can leverage Metaverse technologies to enhance customer engagement, interaction, and satisfaction, ultimately impacting business performance positively with the potential of the Metaverse in optimizing supply chain processes, improving logistics, and enhancing overall operational efficiency for organizations. Nevertheless this paper also focus on how immersive nature of the Metaverse affects work satisfaction, and productivity, leading to potential business performance within organizations. Future research should also focus on the Metaverse, along with cutting-edge technologies, is being explored by organizations to augment their operational efficacy, given the lack of empirical evidence pertaining to the relationship between the Metaverse and business performance at present.

3.2 LIMITATIONS

This study was subject to certain inherent limitations, as is customary in research endeavors. Initially, the literature was exclusively obtained from a singular database. Had alternative databases been employed, it may have been possible to identify and extract additional relevant articles. Furthermore, the present study solely utilized empirical research in adherence to the systematic literature review methodology, thereby preserving the integrity of the selected articles. The findings may have varied had different types of articles been incorporated. Ultimately, the analysis was confined to journal articles, with conference papers, book chapters, and review articles being systematically excluded from consideration.

4. CONCLUSION

In recent years, the concept of the Metaverse, which refers to a virtual reality environment that enables users to connect with each other through immersive experiences, has gained significant popularity. How Metaverse relates to Business Performance has been a significant inquiry in the academic settings as well as industrial settings. The objective of this study is to systematically review the knowledge area related to Metaverse and Business Performance while providing future research avenues. Keyword co-occurrence analysis yielded 3 clusters related to the keywords related to the area under concern. Future research effort may focus on investigating the relationships between these clusters and intra cluster relationships. According to the analysis, the keywords, machine learning, artificial intelligence, deep learning, immersive and algorithm have not been researched as much as other keywords yielded in the analysis. Future researchers may focus on these keywords while conducting research.

Further, the bibliographic coupling graph of the country wise article publications analysis reveals that there is a significant potential for conducting research in different contexts and countries, especially as far the Sri Lankan context is concerned.

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Wear Me: Clothing Feedback and Recommendation Mobile App

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ABSTRACT

The fashion industry is experiencing a rapid transformation driven by advancements in artificial intelligence (AI) and machine learning (ML), which emphasize the growing demand for personalized fashion recommendations. This paper presents the "Wear Me" application, developed to offer tailored clothing suggestions based on user-specific attributes such as body type and skin tone. By utilizing advanced computer vision and deep learning techniques, "Wear Me" analyzes user-uploaded images to provide real-time, aesthetically appropriate outfit recommendations that enhance individual appearance and reflect personal identity. The application is built on a robust three-tier architecture comprising the client tier, logic tier, and data tier, ensuring efficient image processing and seamless user interaction. Functional requirements include user registration, secure image upload, body type and skin tone analysis, and user feedback mechanisms, while non-functional requirements focus on usability, performance, scalability, and security to protect user data. The logic tier employs Convolutional Neural Networks (CNN) and YOLO (You Only Look Once) for effective image recognition, enabling precise body segmentation and personalized recommendations. This study outlines the methodologies and technological frameworks behind the development of the application, highlighting its unique contributions to the fashion recommendation domain. A comprehensive literature review reveals existing gaps in current systems, particularly the insufficient integration of diverse user characteristics into cohesive recommendation models. The findings indicate that "Wear Me" not only addresses the complexities of personal styling but also significantly enhances user satisfaction through its innovative, user-centered design. Ultimately, this research underscores the potential of AI-driven solutions in reshaping the fashion industry

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by providing users with tailored experiences that cater to their unique preferences and identities, thereby improving the overall shopping experience.

Keywords **- Artificial Intelligence, Machine Learning, Fashion Recommendation Systems, Fashion industry, Convolutional Neural Networks (CNN), YOLO, Body type analysis, Skin tone analysis**

1. INTRODUCTION

The fashion industry, one of the world's largest economic sectors, has seen rapid transformation through digital innovation, especially in the fields of artificial intelligence (AI) and machine learning (ML). With consumer choices highly influenced by both personal style and societal trends, providing tailored recommendations has become central to enhancing customer experience. Clothing choices reflect personal identity, social standing, and psychological factors, making the demand for personalized fashion recommendations significant. Studies show that fashion impacts not only individual self-expression but also how one is perceived in social contexts (Kwon, 1991; Stolovy, 2021).

The "Wear Me" application was developed as a response to this need for personalized fashion recommendations. Utilizing AI-driven feedback mechanisms, it allows users to receive real-time recommendations based on their body type, skin tone, and specific fashion preferences. By employing computer vision and deep learning models, "Wear Me" can autonomously analyze user-uploaded images to provide outfit suggestions that enhance individual appearance. This study outlines the methodologies, technological choices, and model development processes behind the app, highlighting its potential to address existing gaps in the fashion recommendation domain.

2. LITERATURE REVIEW

Fashion recommendation systems have evolved over time, moving from basic rule-based models to complex algorithms integrating big data and AI. These systems are categorized into three main types: fashion pairing software, social media-based recommendation systems, and intelligent systems.

Fashion Pairing Software: Fashion paring systems are ways of combining different garments with different styling prowess. These kinds of systems convey knowledge-based fashion coordination using both verbal and visual input, and then they retrieve clothing with comparable qualities. For this kind of system, neural networks and genetic algorithms (GA) are typically used (Chakraborty, et al., 2021).

Natural Language Feedback for Fashion: Producing Diverse and Informative Feedback (Fritz, et al., 2019) NL outfit pairing and fashion feedback creation method. The technology offers text-based comments and advice on how to improve the outfit. Researchers trained two separate models for GOOD and TIP feedback types. Images have been transformed into visual features using CNN, and then the features have been decoded into text to provide feedback. It provides incredibly detailed information on the outfit pairing as a system upgrade. Additionally, a special algorithm

had been used. Increased accuracy is possible, and the user simply gets advice on how to make clothing better.

Social Media-Based Software: Social media platforms have become valuable data sources for fashion recommendations, as they provide insights into user preferences through posts, shares, and likes. Recommendation systems using this data analyze behavioral patterns to suggest trending styles. For instance, Zhang and Caverlee (2019) introduced a recommendation model based on fashion influencer trends on Instagram, while Zheng et al. (2021) developed a framework to learn user preferences based on personal selfies, capturing more personalized style preferences.

Intelligent Systems: The most fruitful research in the field of AI can be introduced as expert or intelligent systems (Zhou et al., 2013). These strategies, when applied to the fashion sector, take advantage of consumer or user traits including physical traits, dress preferences, etc. It considers the connection between the wearer and their appearance, applies its expertise, and offers comments or suggestions as required. "Wear Me" is one instance of an intelligent-based research project.

Intelligent or smart systems are AI-driven models that offer recommendations based on user-specific characteristics, such as body shape or skin tone. These systems often use machine learning models like k-nearest neighbor (k-NN) and CNNs to classify attributes and provide suitable clothing options. "Wear Me" falls within this category, using a hybrid model combining body segmentation and object detection techniques to generate recommendations based on the user's physical traits. Prior work by Grauman and Hsiao (2020) established a foundational framework by using clustering techniques to group similar body types and identify matching clothing.

This literature reveals that, although substantial progress has been made in fashion recommendation systems, most current applications lack the integration of multiple user-specific attributes, such as body type and skin tone, into a single cohesive recommendation model. "Wear Me" addresses this gap by incorporating multiple user characteristics, making it a unique contribution to the field.

3. METHODOLOGY

The "Wear Me" application was developed to meet specific needs in fashion recommendation by combining user attributes—such as body type and skin tone—with advanced image processing and machine learning techniques. The research methodology encompassed a systematic approach from data collection to design and testing, aligning with both practical and theoretical goals. This section describes the research philosophy, data collection methods, development approach, design methodology, and evaluation strategy.

3.1 Research Philosophy and Approach

The project followed a pragmatic research philosophy, aiming to solve real-world issues in personalized fashion recommendation by balancing theoretical insights with practical outcomes. Pragmatism allowed flexibility in methodology, enabling a combination of quantitative and qualitative methods based on what best-met project requirements.

To explore the relationship between consumer preferences and fashion, a deductive approach was applied. The research started with the hypothesis that fashion choices could be optimized by analyzing user attributes, such as skin tone and body type, which led to the development of an app capable of generating customized recommendations. The deductive approach guided the formulation of questions and design parameters, such as the kinds of user characteristics to consider and the technologies required to analyze them.

3.2 Data Collection Methods

Data collection was a vital step, as it informed both the technical requirements and user-centric features of the application. The research relied on two primary sources: primary data gathered directly from participants and secondary data from scholarly resources and datasets.

Primary Data:

Interviews were conducted with fashion industry experts to understand professional insights into styling based on body types and skin tones. Experts were asked to identify common fashion challenges among users, giving the team a clearer picture of what aspects to emphasize in the recommendation model.

Questionnaires were distributed to potential end-users, aiming to understand how people make fashion choices and their interest in receiving AI-driven recommendations. The questionnaire responses helped identify critical user preferences, such as style concerns (color, fit, etc.) and features desired in a recommendation system.

Secondary Data:

A literature review provided a basis for selecting effective ML models, including CNNs and k-NN, which were previously successful in image recognition tasks.

Public image datasets (e.g., fashion databases) were used to train and test the app's algorithms for body type and clothing classification. These datasets included a variety of body shapes, clothing types, and skin tones, allowing the app to learn and recognize diverse features effectively.

3.3 Development Methodology

An Agile development methodology was chosen due to its iterative structure, which allowed for continuous testing and refinement. Agile's flexibility facilitated adjustments based on feedback, crucial for a project needing real-time analysis and complex image processing. The System Development Lifecycle (SDLC) in Agile included the following stages:

Planning: Requirements for the "Wear Me" app were defined in collaboration with stakeholders and based on findings from interviews and questionnaires.

Design: Initial designs were created, covering both system architecture and user interface.

Development: The app was developed in stages, each focusing on specific core functionalities, such as body type identification and clothing analysis.

Testing: Early prototype testing helped identify areas for improvement, while each iteration allowed the team to refine algorithmic accuracy and UI intuitiveness.

Deployment and Review: After each sprint, the app was tested by users to gather feedback for future improvements. The continuous cycle in Agile allowed for timely improvements in response to real-time evaluations.

3.4 Design Methodology

The Object-Oriented Analysis and Design (OOAD) method structured the system around modular components, making it easier to implement and test individual parts. OOAD broke down system functionalities, such as body type analysis and feedback generation, into classes and objects to simplify the integration of various technologies and algorithms.

Class Diagrams: The design included class diagrams to represent objects in the system, like User, BodyType, and Recommendation Engine. This enabled efficient management of each user's personal data and the recommendation model's outputs.

Sequence Diagrams: Sequence diagrams illustrated interactions within the system, such as the sequence of steps involved in uploading an image, processing user attributes, and generating recommendations.

Wireframes and User Interface (UI) Design: Wireframes were developed to enhance user experience by providing intuitive layouts for easy navigation. The UI prioritized simplicity and accessibility to ensure users could upload photos and view recommendations effortlessly.
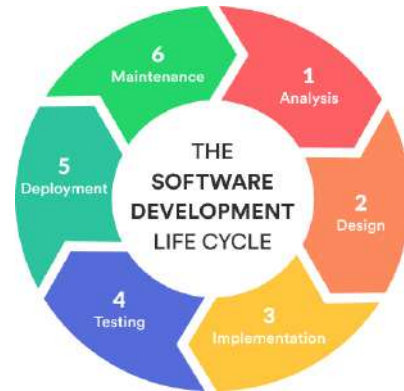
Figure 1. Agile Model
(Anurina, 2021)

3.5 Evaluation Methodology

The evaluation methodology was designed to test the app's accuracy in providing personalized recommendations and to measure user satisfaction with the system's functionality. The classification models are often evaluated using four different types of metrics. These include false positive, false negative, true positive, and true negative. In "Wear Me," a research study, the author focuses on the unique traits of consumers to offer criticism and suggestions. If the user's photograph indicates tan skin, the matching outfit's real value is warm (Akbari et al., 2005). The model should therefore imply warm colors and the potential to categorize matrices as true positives. People with darker skin tones should wear garments made of darker fabric colors (Cuadro, 2022). If the algorithm offers earthy tones that conflict with darker skin tones, it is seen as a false negative. Additionally, this will be applied in accordance with the chosen personal characteristics and any pertinent comments and recommendations.

Benchmarking: The app was benchmarked against similar recommendation systems to understand its competitive strengths and

weaknesses. This involved comparing metrics like recommendation accuracy and user satisfaction to gauge "Wear Me"'s overall performance relative to established systems.

Testing Criteria: The app underwent various testing types:

Functional Testing to confirm that the system performed each core function as expected, such as uploading images, processing features, and providing recommendations.

Non-Functional Testing to assess the app's usability, reliability, and speed in delivering recommendations. Usability testing also involved feedback from end-users to ensure ease of navigation and understanding.

Performance Testing focused on ensuring the system could handle the computational load of real-time image processing and recommendation generation, with minimal delay.

3.6 Risk Management and Mitigation

Given the project's technical and practical challenges, a risk mitigation plan was essential. The main risks identified included:

Data Scarcity: To address the potential lack of diverse image data, the team performed data augmentation to artificially expand the training dataset, allowing the model to learn effectively from limited data.

Technological Limitations: With extensive processing requirements, managing computational resources was critical. The team used tools like Google Colab for model training, leveraging cloud-based GPUs to accelerate training times without exceeding local hardware limitations.

Model Accuracy: For accuracy, regular testing was conducted to adjust parameters within the machine learning models, reducing potential errors in recommendations based on user images.

4. DESIGN

The "Wear Me" application was designed with a focus on providing personalized, AI-driven fashion recommendations, requiring a robust and flexible architecture to support image processing and real-time feedback. This section details the core requirements—both functional and non-functional—and the system's three-tier architecture.

4.1 System Requirements

The system requirements were divided into functional requirements (core actions that the system must perform) and non-functional requirements (qualities that define system performance and user experience).

4.1.1 Functional Requirements:

User Registration and Authentication: The system must allow new users to create accounts and securely log in. Authentication ensures that each user's data is protected and uniquely identifiable.

Image Upload: Users must be able to upload images of themselves or their clothing items. The app should support multiple image formats (e.g., JPEG, PNG) for versatility.

Body Type and Skin Tone Analysis: The app analyzes uploaded images to identify user-specific attributes, focusing on body type (e.g., hourglass, rectangle) and skin tone to tailor recommendations.

Clothing and Style Recommendations: Based on analyzed features, the app provides

feedback on clothing choices, suggesting styles, colors, and cuts that complement the user's unique traits.

User Feedback: Users can provide feedback on recommendations, which helps refine the model's accuracy over time and improves user experience.

4.1.2 *Non-Functional Requirements*:

Usability: The app's interface should be intuitive and easy to navigate, with a streamlined process from image upload to recommendation delivery.

Performance: The system should process images and provide recommendations in under 5 seconds, ensuring minimal delay for users.

Scalability: The architecture should be scalable to handle multiple simultaneous users without compromising speed or accuracy.

Security and Privacy: User data, including images and personal information, must be securely stored, adhering to privacy standards like GDPR. Sensitive data should be encrypted to ensure confidentiality.

4.2 System Architecture

The three-tier architecture model, consisting of the client tier, logic tier, and data tier, was adopted to structure the application efficiently, allowing for seamless integration of the user interface, processing functions, and database. The necessary data from the data tier has been stored and made available as needed (Martin, 2022).
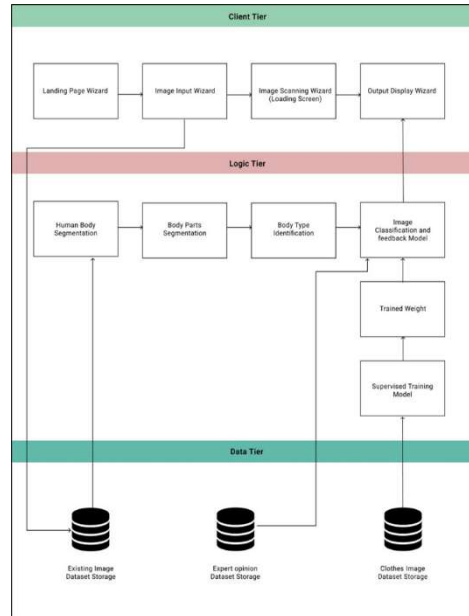
Figure 2. Three-tier architecture (self-composed)

4.2.1 *Client Tier (Presentation Layer)*:

This tier represents the app's interface where users interact with the system. Designed with a user-friendly layout, the client tier enables users to upload images, view recommendations, and provide feedback. The interface includes a simple flow from image upload to results display, ensuring smooth user interaction.

Key components include:

Landing Page: Users can access the app's main functions and are prompted to log in or register.

Image Input Interface: A streamlined upload feature allows users to submit images for analysis.

Recommendation Display: After processing, the app displays fashion suggestions tailored to the user's body type and skin tone.

4.2.2 *Logic Tier (Application Layer)*:

The logic tier is the core of the "Wear Me" system, where data processing, image analysis, and recommendation generation occur. This tier handles model computations, including body segmentation and clothing classification, using a combination of Convolutional Neural Networks (CNN) and YOLO (You Only Look Once) for efficient image recognition and processing.

Core functions include:

Body Type Segmentation: Identifies and segments the user's body type from the uploaded image.

Skin Tone Identification: Determines the user's skin tone to suggest suitable color schemes.

Recommendation Engine: Analyzes segmented features and generates tailored clothing and style suggestions based on the user's identified traits.

4.2.3 *Data Tier (Database Layer):*

This tier stores user data, including account information, uploaded images, and feedback. Separate datasets for body types, clothing styles, and color palettes are maintained, ensuring the recommendation model has extensive data for accurate suggestions.

User Profile Database: Contains user-specific data, including preferences, past recommendations, and feedback, allowing for personalized experiences.

Image Dataset Storage: Houses images used to train the model for body type, skin tone, and style matching, with continual updates to improve model precision.

Feedback and Recommendation Logs: Records user interactions and feedback to enhance model accuracy over time, supporting the system's adaptability and improvement.

This three-tier architecture was selected for its ability to streamline user interactions and centralize processing while ensuring data security and scalability. By compartmentalizing tasks across distinct layers, the system maintains efficiency, minimizes load times, and ensures a responsive user experience.

4.3 User Case Diagram
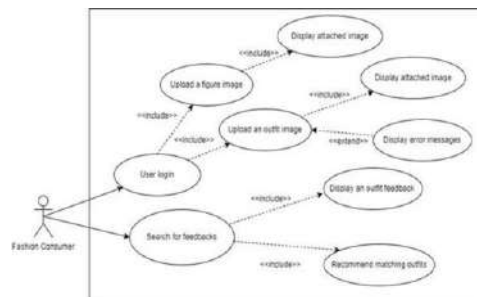
Figure 3. System's User Case Diagram

The fashion consumer is the only actor in the system, according to the use case diagram that is attached. The performer can upload a picture of their clothing and look for system comments about it.
The customer can then read the individualized comments and suggestions about the clothing based on their unique qualities

5. RESULTS

The "Wear Me" project's testing can be classified into two categories based on the test plan. There are two types of testing: functional and non-functional. Different test cases were built to test the application against each of the functional and non-functional criteria that were specified in the prototype. Testing will be done on the "Wear

Me" system to check if it performs as anticipated.

5.1 Model Testing

To distinguish and focus on different types of bodies and various types of casual gear, specific ML models for the newly developed clothing dataset and body type dataset were trained.

Training is crucial for the model to develop and give the best results. The model must be tested after training, which is a crucial step. As a result, the model is evaluated using the batch sizes, epoch counts, and loss functions.

5.1.1 "Wear Me" Clothing Images with Yolo

We used the Yolo model, which was trained on top of the Dart-Net framework, to describe the model testing for the clothing dataset. According to the configurations listed below, the model was trained. The number of epochs that could be obtained by multiplying 24 by 2000 was 48000. The steps are calculated by multiplying 48000 by 80%, and the result is 38400 steps.

5.1.2 Testing Model Accuracy

A popular metric for evaluating the accuracy of object-detection models is the Mean Average Precision (MAP) value. The MP value is calculated when recall values are higher than 0 to 1. The tested model had a MAP value of 83.85%, which is a respectable test result, as shown in the screenshot below.

```
IoU threshold = 50 %, used Area-Under-Curve for each unique Recall
mean average precision (mAP@0.50) = 0.83 8528, or 83 .85 %
Total Detection Time: 3 Seconds
```

Figure 4. Model Accuracy Details

5.2 Benchmarking

After testing the model with epochs, batch sizes, and steps, the author will go over how benchmarking was done using five of the top researchers, along with the program "Wear Me." The "Wear Me" clothing dataset was used for the benchmarking application against the other researchers in the field.

Work	Description	Performance	
		Percentage	AUC
Wear Me (Ours)	The dataset contains casual images of female clothes. The clothes are categorized into 24 classes.	83.85%	
(Hidayati et al., 2018)	Style4BodyShape dataset with three types of data. Those are female celebrities, body measurements of celebrities, and celebrity photos	53%	
(Foysal, Chang, Bruess, and Chong, 2021)	240 images of body shapes were collected as the dataset of the system	87.50%	
(Sattar, Pons-Moll and Fritz, 2019)	A dataset was created using "Chictopia" magazine.	80.17%	-
(Garude, D 2019)	A clothing dataset was created based on different occasions.	65.32%	-
(Hsiao and Grauman, 2020)	Collected the dataset from an online shopping site named Birds nest. And used Body diverse dataset to identify the body shapes.		0.58

Table 1. Benchmark Details

The "Wear Me" model was evaluated as the second-best model based on the accuracy of the other models in the domain that were selected, according to the benchmarking findings. And this shows how accurate the system's predictions were.

5.3 Functional Testing

Test Case	FR ID	User Action	Expected Results	Actual Results	Results Status
1	FR 1	Inputs valid image.	Image getting attached.	Image getting attached.	Passed
2	FR 2	Inputs files with an incorrect file extension.	Display an error popup and reject attaching the file.	Display an error popup and reject attaching the file.	Passed
3	FR 3	Consumer input front and side views of the figure images.	The model identifies the human body, detects body type, and users' face skin color.	The model identifies the human body and detects body type.	Passed
4	FR 4	Consumer uploads selected cloth images.	The model identified cloth category and check with the identified human features.	The model identified cloth category and check with the identified human features.	Passed
5	FR 5	The user clicks on the check results button.	Navigate to the feedback page.	Navigate to the feedback page.	Passed
6	FR 6	The user will direct to the feedback page.	The system shows whether the clothing item is matching or not.	The system shows whether the clothing item is matching or not.	Passed
7	FR 7	The user will direct to the recommendation page.	The system shows matching clothing items according to the	The system showed matching clothing items according to the	Passed

Table 2. Functional Requirements Testing

5.4 Module and Integration Testing

Module	Input	Expected Output	Actual Output	Status
Input image validation	The correct format of the image	The image gets attached and analyze details	The image gets attached and analyze details	Passed
	Incorrect format of the image.	Shows an error message	Shows an error message	Passed
	File with wrong file type	Shows an error message	Shows an error message	Passed
User feature identification	Input human image	Identifying the human, the body type, and skin color	Identifying the human, the body type, and skin color	Passed
	Cloth image	Identify the cloth category.	Identify the cloth category.	Passed

Table 3. Module Integration Testing

5.5 Non-Functional Testing

Performance evaluation of the deployed mobile application served as the focal point of the performance testing.

5.5.1 Performance Testing

The most important component of the executed research component is the effectiveness of the mobile application. It was therefore essential to test the application to make sure it runs properly when the user uses it. The memory allocation while the application was running was assessed using an i5 4th Gen processor and 8 GB of RAM. And when the actions were performed within the mobile application, 128MB was utilized.

Figure 5. Performance Testing

5.5.2 Usability Testing

Usability measures both how simple it is for people to utilize the application and how user- friendly the designed and implemented user interfaces. To enhance the usability of the program, the "Wear Me" system was developed and put into use in accordance with UI design principles. The chapter on implementation contains images of the application.

5.5.3 Maintainability Testing

Future improvements will be simple to implement because the ML model, backend, and frontend codes were commented on.

5.6 Limitations

The dataset was created using 44 classes and 30 apparel pictures from each class for testing and training the prototype. The main issue raised by the author is the possibility of including more garment picture data in the testing procedure. The dataset, which the author created totally from scratch, contained just 1320 data. Therefore, the testing would yield more accurate findings if the dataset had more images of clothing.

6. DISCUSSION

The evaluation of the **Wear Me** application focused on assessing the app's effectiveness in meeting user needs, functional accuracy, and usability. The evaluation was conducted using both qualitative and quantitative

methods, involving feedback from end-users, industry experts, and subject matter specialists in fashion and technology.

6.1 Evaluation Methodology and Approach

A mixed-methods approach was adopted, incorporating both qualitative insights from expert interviews and quantitative self-evaluation to assess how well the app met its objectives. The evaluation emphasized practical feedback on the user experience, model accuracy, and system reliability.

Qualitative Analysis: Expert and end-user feedback was gathered through interviews and thematic analysis to identify strengths and areas for improvement.

Quantitative Analysis: Self-evaluation focused on measurable criteria like recommendation accuracy, response time, and system usability.

6.2 Evaluation Criteria

The evaluation criteria were divided into categories to comprehensively assess both functional and non-functional aspects of the app. Key criteria included:

Accuracy of Recommendations: The relevance and precision of fashion suggestions based on user body type and skin tone.

User Satisfaction: The ease of use and overall satisfaction reported by end-users.

System Responsiveness: The app's response time in processing images and providing recommendations.

Scalability: The ability to handle multiple users simultaneously without performance degradation.

6.3 Self-Evaluation

The self-evaluation assessed "Wear Me"'s performance against the set functional and non-functional criteria, providing a clear picture of the system's strengths and any limitations. This process enabled a structured review of how effectively each feature was implemented and highlighted potential improvements for future updates.

6.4 Selection of Evaluators

Three groups of evaluators were chosen to ensure well-rounded feedback:

Industry Experts: Professionals with experience in AI and ML applications in fashion.

Fashion Domain Experts: Stylists and fashion consultants who could provide insights on the app's recommendation accuracy.

End Users: Six users, including both fashion-conscious individuals and casual users, were selected to test the app's usability and interface design.

6.5 Evaluation Results and Expert Opinions

The evaluation results were positive, with feedback emphasizing the app's effectiveness in providing personalized recommendations. Each evaluator category provided unique insights:

Industry Experts: Industry experts appreciated the app's use of machine learning for real-time feedback, though they suggested further refinement in skin tone analysis for nuanced color recommendations.

Fashion Domain Experts: Fashion experts praised the app's ability to identify body types accurately, which enabled relevant clothing suggestions. However, they

recommended expanding the dataset to include a wider variety of clothing styles for a broader appeal.

End Users: Users found the app easy to use, with intuitive navigation. Many were impressed with the relevance of the recommendations, though some suggested adding more specific feedback on outfit combinations.

6.6 Qualitative Analysis

The qualitative feedback was thematically analyzed to identify recurring suggestions, which included:

Increased Customization Options: Users requested more flexibility to input specific preferences, such as color or style preferences.

Expanded Clothing Categories: Experts suggested incorporating more varied clothing types to diversify recommendations.

Real-Time Feedback Enhancement: Users desired faster processing times and suggested an option for instant outfit comparisons.

6.7 Limitations of Evaluation

Evaluation was limited by logistical challenges, such as political instability and COVID-19 restrictions, which affected data collection. Due to these constraints, some end-users were unable to interact directly with the app and instead provided feedback based on video demonstrations. Additionally, while expert insights were valuable, the evaluation process could have benefited from a larger end-user sample for more representative feedback.

6.8 Evaluation of Functional and Non-Functional Requirements

The app's functional and non-functional requirements were evaluated comprehensively:

Functional Requirements: The app successfully implemented core functionalities, such as image upload, body type identification, and personalized recommendation delivery.

Non-Functional Requirements:Performance criteria, such as response time and memory usage, met expectations, except for minor delays under heavy usage, which could be improved in future iterations.

7. CONCLUSION

The Wear Me project successfully developed an AI-driven mobile application that provides personalized fashion recommendations based on user-specific attributes, such as body type and skin tone. This project bridges the gap in automated fashion recommendations by incorporating multiple user-specific traits, thereby enhancing relevance and personalization.

7.1 Achievement of Research Objectives

The project achieved its main objectives by:

Developing an ML-Powered Recommendation Model: The application effectively utilized machine learning algorithms (YOLO for object detection and TensorFlow for skin tone analysis) to accurately classify user features.

Implementing a User-Friendly Interface: The app's interface was designed for ease of use, ensuring that users could upload images and receive recommendations seamlessly.

Providing Accurate and Relevant Fashion Advice: Evaluation results demonstrated the

app's high accuracy, with an MAP score of 83.85% in clothing detection, meeting the project's goal of delivering reliable feedback.

7.2 Key Challenges and Limitations

While the Wear Me app successfully met most requirements, some challenges were encountered:

Dataset Limitations: The custom dataset, while sufficient for initial development, limited the variety of clothing styles available for recommendation. An expanded dataset could improve the model's accuracy and user satisfaction.

Performance Constraints: During testing, slight delays were observed in image processing under heavy usage, indicating potential scalability issues for future iterations.

Evaluation Constraints: Due to COVID-19 restrictions and political instability, some evaluation processes had to be conducted online, limiting user interaction with the app.

7.3 Future Enhancements

Several avenues for enhancing the Wear Me app were identified:

Dataset Expansion: Adding more diverse clothing styles and body shapes to the training dataset would improve recommendation variety and accuracy.
Additional User Attributes: Future iterations could incorporate other personal attributes, such as hair color, height, and facial features, for even more tailored recommendations.

Real-Time Image Capture: Implementing real-time image capture could streamline the user experience by allowing instant outfit comparisons within the app.

Cross-Platform Availability: Expanding the app to iOS and web-based platforms would increase accessibility for a broader user base.

7.4 Contribution to the Field

The Wear Me app contributes to the fashion recommendation industry by addressing the unique need for user-specific recommendations that go beyond basic style matching. By integrating multiple machine learning techniques, this project demonstrates how AI can be harnessed to deliver personalized fashion feedback efficiently. This approach sets a new benchmark for intelligent recommendation systems in the fashion domain, offering a template for future developments in AI-driven personalization.

7.5 Closing Remarks

The Wear Me project represents a significant step toward personalized fashion recommendations. Through rigorous testing, thoughtful design, and detailed evaluation, the app has demonstrated its potential to enhance user experience in the fashion industry. With future expansions and refinements, Wear Me can become a powerful tool for style-conscious users, embodying the next generation of AI-driven fashion solutions.

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Impact of Experiential Marketing on Customer Satisfaction with Reference to Restaurant Sector in Sri Lanka; A Study on Pizza Hut

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ABSTRACT

Ever-changing client requirements need invaluable and lasting impressions to retain loyal consumers and acquire new client bases. Experiential Marketing, in fact, is a tool used to attract consumers into interactive brand experiences. Although experiential marketing boosts the restaurant industry, the use of experiential marketing has not been thoroughly documented in prior studies, and a limited number of studies have been undertaken in culturally diversified Sri Lanka, yet no research study has been conducted for well-established brands like Pizza Hut. The goal of this study is to address that empirical and contextual gap by investigating the influence of experiential marketing on customer satisfaction in the Sri Lankan restaurant industry focusing on Pizza Hut. Five experiential marketing aspects; sense, feel, think, act, and relate have been utilised by researchers to analyse the consumer experience. Strategic Experiential Modules (SEM), first presented by Schmitt are the source of sense, feel, think, act, and relate and the module was not altered. The study employs a deductive approach and using the convenience sampling method, 305 respondents were selected from the population to participate in the survey. Data were collected using a self-administered questionnaire with 5-point Likert scales, and hypotheses were evaluated using a regression model in SPSS. Overall, the study's findings suggest that experiential marketing significantly impacts customer satisfaction, thus confirming the objectives of the research study. Managers in the hospitality and restaurant industry can utilise the findings of this study to gain valuable customer insights and develop effective marketing strategies.

***Keywords* - Experiential Marketing, Customer Satisfaction, Restaurant Industry**

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1. INTRODUCTION

1.1 Introduction and Problem Identification

Experiential marketing represents the evolution and strategic integration of various established marketing approaches - sense, feel, think, act, and relate marketing (Jinyong, 2003). It has recently gained prominence as a marketing strategy due to its capacity to enable organisations to create a synergistic effect through the systematic integration of these elements, frequently resulting in favourable business outcomes (Jinyong, 2003). Experiential marketing has become an increasingly fundamental strategy for differentiation among consumer brands in competitive industries (Schmitt, 2010). While experiential marketing techniques requiring customer participation may differ in emphasis and methodology across industries, the core philosophy can be applied universally whether in education, hospitality and restaurant, manufacturing or information technology (Jinyong, 2003). The culinary industry was chosen for the discussion of the concept as it has the opportunity and capacity to expand since both food and drinks are the fundamental necessities for humankind, which will always find the chance to evolve through time and cuisines (Yanti Febrini et al., 2019).

Regarding the restaurant sector in Sri Lanka, the industry has been rapidly growing, being one of the best tourist destinations in the world, making the country and industry an Eden for studies (Sri Lanka Tourism Development Authority, 2023). In addition, more and more local restaurants and chains have emerged, and global restaurant chains have entered the Sri Lankan market (Nirmani et al., 2017). Currently, Sri Lanka is not only home for local restaurant brands but also for multinational brands like Pizza Hut, KFC, McDonalds' and Domino's Pizza (Patabandige & Yapa, 2016).

Since its founding in 1958, Pizza Hut has grown to be a well-known brand in the restaurant sector, with more than 18,000 locations currently operating in 116 countries (Mendis et al., 2022). Pizza Hut launched its first restaurant in Sri Lanka in 1993 as the first multinational restaurant brand to enter the Sri Lankan market and has expanded since to over a hundred locations across the island, which makes Pizza Hut more reachable and affordable by all Sri Lankans while receiving the same taste throughout the island (Devendra, 2023). Pizza Hut stands out from other eateries in terms of accessibility, affordability, and uniqueness, prompting the researcher to explore how experiential marketing influences customer satisfaction (Udurawana, 2014).

Restaurants are not only the places where customers tend to satisfy one of the basic needs of humans, hunger, but also the places where consumers experience excitement, gratification, satisfaction and peace of mind, which not every customer feels when consuming foods and beverages from a restaurant (Ha & Jang, 2010). A unique experience that restaurants give to their customers is an important strategy to give customers memorable dining while retaining customers (Jang et al., 2011). This experiential method emphasises developing holistic experiences that appeal to

consumers' senses, emotions, minds, and interpersonal connections in addition to their utilitarian product features (Smilansky, 2017). Furthermore, research shows experiential marketing can positively influence consumer perceptions, satisfaction, and loyalty (Bilgihan, 2016; C. H. J. Wu & Liang, 2009).

According to Tam & Tai (2014), the majority of research on the impact of experiential marketing, however, has been done in Western countries and industrialised countries. Understanding the effects of experiential marketing on customers in developing nations such as Sri Lanka other than Western ones is inadequate (Tam & Tai, 2014). This is a challenge for firms operating in a variety of international marketplaces because research from Western contexts may not be universally applicable (Amin & Tarun, 2019). Furthermore, the use of experiential marketing in the hospitality and tourism industry, which also consists of the restaurant industry, is scarce in literature even when experience is considered a significant benefit for these industries (Pham & Huang, 2015; Williams, 2006).

On the academic front, most prior research has focused solely on other countries and industries, resulting in a considerable knowledge gap regarding how consumers in the Sri Lankan restaurant industry respond to experiential strategies, and the study makes a substantial effort to address the shortage of empirical data on the efficiency of experiential marketing in the island nation, Sri Lanka and Sri Lankan restaurants (Tam & Tai, 2014). Moreover, not only a knowledge gap but also there is a significant

gap in the literature in the hospitality and tourism sector, including eateries (Amin & Tarun, 2019; Pham & Huang, 2015; Williams, 2006). The influence of experiential marketing has been broadly discussed in the literature with customer repurchase intention, brand equity building, customer revisit intention and customer loyalty, but the impact of experiential marketing on customer satisfaction is rarely discussed, indicating a significant gap in the literature (Ellitan, 2022; Mukiira et al., 2017; Salomão & Santos, 2022; Sehani & Hettiarachchy, 2022).

The restaurant industry has traditionally relied on conventional marketing, but experiential marketing offers unique potential (Amin & Tarun, 2019). From an applied standpoint, the study provides significant insights that enable Sri Lankan Pizza Hut restaurants to strategically improve experience activities based on empirically discovered local factors of consumer satisfaction (Widowati & Tsabita, 2017). This study aims to assist restaurant managers and decision-makers in Sri Lanka, including Pizza Hut, in identifying critical aspects of experiential marketing and understanding how they influence customer satisfaction (Amin & Tarun, 2019).

1.2 Literature Review

1.2.1 Experiential Marketing

Experiential marketing refers to the ability of a commodity to transfer psychological encounters to the clients and the capability of the commodity to hold out the consumer's mind through consumption (Fatmawati et al., 2017). By providing people with

memorable, satisfying experiences, experiential marketing engages their thoughts and emotions (Araci et al., 2017).

According to some studies, there are some significant factors in experiential marketing which business firms create intending to pledge encounters to their clients, compromise escapades, surroundings, and vibe (Yuan & Wu, 2008). Thus, to be ahead of the business run and win over the market over others, fabricating and giving unforgettable, idiosyncratic yet feasible encounters for the consumers are essential for businesses (Rageh Ismail et al., 2011).

Experiential marketing enhances customer satisfaction by creating positive experiences, and research shows a strong link between its components and customer satisfaction, which is influenced by sensing, feeling, thinking, acting, and relating (M. Wu & Tseng, 2014). Despite the fact that there is literature on various countries and industries, it is crucial to examine how experiential marketing strategies impact clients in a different market, such as the restaurant industry in Sri Lanka including Pizza Hut, because consumers' perceptions of restaurant attributes and their propensity for loyalty and satisfaction are greatly influenced by where they live and how they interact with brands (Seock & Lin, 2011).

A framework for experiential marketing was developed by Schmitt (1999), who combined traditional marketing concepts with new ideas. The framework, known as Strategic Experiential Modules (SEM), consists of five elements: Sense, Feel, Think, Act, and Relate. SEM model can be better discussed through mentioned five elements as described below (Schmitt, 2010).

1.2.2 Sense Marketing

According to Maghnati et al. (2012), sense experience refers to the perceptions and impressions customers build about products or services based on their sensory interactions.

Nigam (2012) referred, sense experiences encompass the sensory and tangible elements of a product or encounter, appealing to the five senses: sight, sound, scent, taste, and touch. By incorporating these elements into offering products and services, organisations aim to add a layer of beauty, excitement, and satisfaction. This unique sensory approach helps the organisations stand out in the market and allows them to forge connections with their customers (McCole, 2004).

According to M. Wu & Tseng (2014), sense is a significant predictor of customer satisfaction. On the basis of the discussions above, the following hypothesis has been developed.

H_1: Sense has a significant positive impact on customer satisfaction.

1.2.3 Feel Marketing

Feel marketing is positive or negative feelings toward a company product or service that will influence the extent to which it is consumed (Nigam, 2012). Rytel (2010) defined emotional marketing as a substantive shift in marketing management based on the design of emotional ties among the company and the consumer as the key

motivator of customers purchasing decisions.

According to Liyanapathirana & Nishadi (2020), feel refers to customers' emotional reactions to a company's brand, often shaped by their experiences at the point of consumption, indicating that friendly service from the sales organisation can significantly enhance customer satisfaction. Thus, the hypothesis below originated.

H_2: Feel has a significant positive impact on customer satisfaction.

1.2.4 Think Marketing

Think marketing appeals to the intellect, inspiring creativity and motivating consumers to solve problems and create meaningful experiences while promoting harmony and peace (Schmitt, 2010).

The primary purpose of think marketing is to develop consumer intelligence and satisfy the consumer with creativity (Indrawati & Fatharani, 2016). Consumer intelligence hinges on cognitive processes that facilitate creative perception, interaction, and management of experiences, thereby enhancing these cognitive abilities among consumers (LaSalle, 2003).

Furthermore, consumer experiences greatly affect the thinking and cognitive process regarding the brand and products which the brand serves (Gentile et al., 2007). According to Fatmawati et al. (2017), think marketing has a significant positive impact on customer satisfaction. Considering the above arguments, the below hypothesis is formulated.

H_3: Think has a significant positive impact on customer satisfaction.

1.2.5 Act Marketing

Act marketing is acquainted with regard to the design of the experiences on individual's element through the way the consumer action, either clandestinely or in the corporation between each other and with groups of members. The aim is to modify the action and patterns of relating to a long period of time in sponsored of the selective products or services (Nigam, 2012).

However, behaviours and styles of living can be modifications by presenting various kinds of desires, applying inspiration and affection (Gentile et al., 2007). In the words of Sehani & Hettiarachchy (2022) marketers focus on consumers' behaviours and actions to showcase different ways of living and interacting globally. They consider customers' physical traits, lifestyles, and attitudes when creating these experiences, as well as the social interactions that happen with others.

According to Indrawati & Fatharani (2016), Act marketing has a significant impact on customer satisfaction. Thus, the below hypothesis is derived.

H_4: Act has a significant positive impact on customer satisfaction.

1.2.6 Relate Marketing

Relate marketing aims to connect someone with something outside of themselves (Fatmawati et al., 2017). Consumers can specifically build connections with social entities through buying and using products and services (Maghnati et al., 2012). In their study, Hsin Chang & Wang (2011) emphasise the importance of consumers associating their experiences with social

categories and larger social structures through consumption. This process is not only about obtaining specific goods and services but is also one of the most important ways to gain social acceptance and build social identity (Nigam, 2012).

Relate marketing has a significant impact on customer satisfaction (Indrawati & Fatharani, 2016; M. Wu & Tseng, 2014). However, M. Wu & Tseng (2014) defined relate dimension as the least important element among the elements in the SEM model. Considering the above arguments, the following hypothesis is formulated.

H_5: Relate has a significant positive impact on customer satisfaction.

2. METHODOLOGY AND EXPERIMENTAL DESIGN

2.1 Research Design

This study employs a deductive approach to examine and prove an existing theory. Primary data was obtained via a structured questionnaire. Customers who dined at Pizza Hut restaurants in Sri Lanka were considered the population of the study.

With a 95% confidence level, the sample size of 305 customers was chosen from the target population using the convenience sampling method by the researcher, who based his selection on the judgment of "customers who dined in Pizza Hut restaurants". Considering that Pizza Hut operates over a hundred locations, collecting data from every customer is not feasible. Therefore, a sample size of 305 respondents was selected for convenience and efficiency in data collection. This sample is intended to provide insights that can be generalised to the broader target population.

Consequently, a self-administered questionnaire was made available to the sample responders online using Google Forms. Customers in this survey were asked to answer on a five-point Likert scale, where one represented "strongly disagree" and five represented "strongly agree." The data analysis was done using the SPSS software suite.

2.2 Conceptual Framework

Building on a comprehensive literature review, the following conceptual framework provides a graphical depiction of the impact of experiential marketing on customer satisfaction. This framework was then subjected to empirical analysis using data that was collected. Therefore, this research aims to investigate the impact of experiential marketing on customer satisfaction.
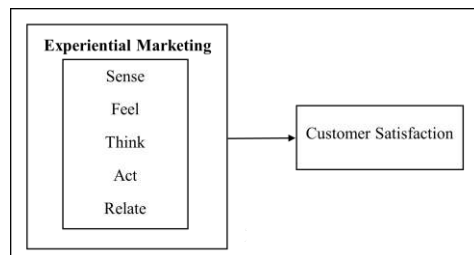
Figure 1. Conceptual Framework

The conceptual framework is developed based on "Experiential Marketing" by Schmitt (1999). The independent variable of the study is experiential marketing, which consists of five sub-variables: Sense, Feel, Think, Act, and Relate. The dependent variable is customer satisfaction.

3. RESULTS AND DISCUSSION

3.1 Demographic Profile of the Respondents

Table 1. Gender of Respondents

Gender	Frequency	Percentage
Male	125	41%
Female	180	59%

Source: Survey Data (2023)

The majority of the respondents surpassing more than half; females claim 59% while the male respondent percentage is 41%.

Table 2. Age of Respondents

Age	Percentage
Below 25	54.1%
Between 25 – 35	26.6%
Between 36 – 45	9.2%
Between 46 – 55	6.9%
Above 55	3%

Source: Survey Data (2023)

According to Table 2, Most respondents are from the "Below 25" age group, claiming 54.1% of total respondents, while the "Between 25 – 35" age group is following the "Below 25" age group, representing 26.6%. The percentage of the "Between 36 - 45" age group is less than half that of the "Between 25 - 35" age group, claiming 9.2%. Age groups "Between 45 -55" and "Above 55" represent the least number of respondents, 6.9% and 3%, respectively.

Table 3. Regions of Respondents

Province	Percentage
Central	11.8%
Eastern	3.6%
Northwestern	3.9%
Northern	3.0%
Sabaragamuwa	7.5%
Southern	37.0%
Uva	4.3%
Western	28.9%

Source: Survey Data (2023)

Most of the respondents are from the Southern Province, representing 37% of the total respondents, while the Western Province follows the respondents of the Southern Province, which is 28.9%. Western Province is followed by Central Province, Sabaragamuwa Province, Uva Province, Northwestern Province and Eastern Province, with 11.8%, 7.5%, 4.3%, 3.9%, and 3.6% respectively. The lowest number of respondents is from the Northern Province, which accounts for 3%.

3.2 Factor Analysis

Table 4. Factor Analysis

Variable	Items	Factor Loading
Sense	SE1	.821
	SE2	.886
	SE3	.781
Feel	FE1	.775
	FE2	.688

	FE3	.679
	FE4	.807
Think	TH1	.827
	TH2	.797
Act	AC1	.768
	AC2	.803
	AC3	.601
Relate	RE1	.865
	RE2	.868
	RE3	.831
Customer Satisfaction	CS1	.639
	CS2	.689
	CS3	.744
	CS4	.759

Source: Survey Data (2023)

According to factor analysis, all the items have indicated factor loading estimates higher than 0.6.

Table 5. KMO and Barlett's Test of Sphericity

KMO	Barlett's Test of Sphericity
0.883	0.0000

Source: Survey Data (2023)

Sampling adequacy of data used in factor analysis can be determined through KMO and Barlett's test. The KMO value indicated in Table 5 is 0.883, which is greater than 0.5, and the 0.0000 value of Barlett's Test is lower than 0.05, which ultimately means that factor analysis is useful with the data set.

3.3 Convergent Validity

Table 6. Convergent Validity

	AVE	Composite Reliability
Sense	0.690	0.869
Feel	0.547	0.827
Think	0.660	0.795
Act	0.532	0.771
Relate	0.731	0.891
Customer Satisfaction	0.503	0.801

Source: Survey Data (2023)

All average variance extracted (AVE) values are greater than 0.5 and between 0.503 and 0.731, according to "Table 6". Furthermore, CR values exceed 0.7, indicating the established validity of the constructs.

3.4 Discriminant Validity

Table 7. Discriminant Validity

	Sense	Feel	Think	Act	Relate
Sense	.831				
Feel	.553	.740			
Think	.305	.384	.812		
Act	.405	.620	.368	.729	
Relate	.386	.421	.627	.379	.855

Source: Survey Data (2023)

The diagonals in Table 7 display the AVE's square root, while the off diagonals represent the correlations between the constructs. The square root of every AVE is greater than the correlation between any two latent variables. Thus, it is possible to

conclude that the researcher attained discriminant validity to the extent.

3.5 Reliability

Table 8. Cronbach's Alpha Reliability

Variable	Cronbach's Alpha
Sense	0.865
Feel	0.866
Think	0.864
Act	0.813
Relate	0.946
Customer Satisfaction	0.913

Source: Survey Data (2023)

Figures in Table 8 varying between 0.813 and 0.946 are higher than the threshold level of 0.7 and indicate good reliability.

3.7 Regression Analysis

Table 9. Regression Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.815	.665	.659	.36383

Source: Survey Data (2023)

Customer satisfaction and the independent variables have a medium positive correlation, as indicated by the R-value of 0.815, demonstrating the independent variables' linear solid link with the dependent variable.

The independent variables in the suggested predictive model can account for 65.9% of the variation in customer satisfaction, according to the Adjusted R squared value of 0.659. Based on the collection of explanatory factors it contains, this indicates that the model explains more than half of the variability observed in satisfaction levels. Considering this, the model's ability to forecast factors influencing customer satisfaction is comparatively strong. However, 34.1% of the variation remains unexplained, suggesting that crucial factors other than those covered by the current variable set affect satisfaction.

Table 10. ANOVA Table

	Regression	Residual	Total
Sum of Square	78.430	39.579	118.009
df	5	299	304
Mean Square	15.686	.132	
F	118.500		
Sig	0.0000		

Source: Survey Data (2023)

The computed p-value is 0.000, indicated in Table 10, which is much less than the significance level of 0.05. This suggests that there is substantial statistical evidence for a strong relationship between the dataset's independent variables and customer satisfaction, and this study's regression model is fit and appropriate.

Table 11. Coefficients Table

	Unstandardised Coefficients		Standardised Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	.412	.165		2.497	.273
Sense	.077	.038	.084	2.035	.043
Feel	.269	.049	.261	5.461	.000
Think	.064	.035	.079	1.799	.073
Act	.250	.037	.297	6.803	.000
Relate	.274	.037	.336	7.444	.000

Source: Survey Data (2023)

Multiple regression equation can be formed as,

Customer Satisfaction (Y) = 0.412 + 0.077(Sense) + 0.269(Feel) + 0.064(Think) + 0.250(Act) + 0.274(Relate)   [01]

3.8 Hypothesis Testing

H1: Sense has a significant positive impact on customer satisfaction.

Table 12 shows that sense has a p-value of 0.043, less than the significance criterion of 0.05. Thus, sense marketing has a significant positive impact on client satisfaction. The β value is +0.084, indicating a positive relationship between variables. Thus, assuming the first hypothesis (H1), the conclusion can be drawn that sense has a significant positive impact on consumer satisfaction. Supporting the findings of this study, the study done by Liyanapathirana & Nishadi (2020) identified a significant impact on customer satisfaction by sense.

H2: Feel has a significant positive impact on customer satisfaction.

The p-value of 0.0000 indicates a significant relationship between feel and customer satisfaction (p<0.05). The β value of feel is +0.261, indicating a positive impact between variables. Thus, it is apparent that feel has a significant positive impact on customer satisfaction. Thus, the second hypothesis (H2) can be adopted. This adoption can be further justified through the study done by M. Wu & Tseng (2014).

H3: Think has a significant positive impact on customer satisfaction.

The p-value of think is 0.73, which is greater than 0.05, indicating that there is no significant relationship between think and customer satisfaction. The β value of think (+0.079) indicates a positive correlation between the two variables. However, the third hypothesis cannot be adopted because there is no significant connection between the variables. Therefore, the third hypothesis (H3) has to be rejected. However, in literature, Liyanapathirana & Nishadi (2020) demonstrated that think marketing has a significant impact on customer satisfaction while M. Wu & Tseng (2014) demonstrated that think marketing does not have a significant impact on customer satisfaction.

Table 12. Hypothesis Testing

Hypothesis	Variable	β Value	β Value Sign	Sig	Conclusion
H_1	Sense	0.084	Positive	0.043	Accepted
H_2	Feel	0.261	Positive	0.0000	Accepted
H_3	Think	0.079	Positive	0.73	Rejected
H_4	Act	0.297	Positive	0.000	Accepted
H_5	Relate	0.336	Positive	0.000	Accepted

Source: Survey Data (2023)

H4: Act has a significant positive impact on customer satisfaction.

The beta value of act is +0.297, and a positive influence between variables can be observed. Act revealed a p-value of 0.000, explaining there is a substantial impact between act and customer satisfaction as p<0.05. It is evident from this that the act significantly impacts customer satisfaction. As a result, it is possible to adopt the fourth hypothesis (H4). Concreting the findings of the study, Indrawati & Fatharani (2016) found a significant impact on customer satisfaction by act marketing.

H5: Relate has a significant positive impact on customer satisfaction.

Table 12 reveals that the p-value for relate is 0.0000, which is below the significance level of 0.05. As a result, relate marketing has a significant impact on customer satisfaction. Furthermore, the β value of +0.336 suggests a positive association between variables. Thus, accepting the fifth hypothesis (H5), it can be concluded that relate has a significant positive impact on customer satisfaction. This conclusion can be supported by the study of Yeh et al. (2019).

4. CONCLUSION AND FUTURE IMPLICATIONS

The objective of this study was to examine the impact of experiential marketing on customer satisfaction in the restaurant industry, with a specific focus on Pizza Hut in Sri Lanka. This study contributes to the extant literature by investigating experiential marketing in the restaurant sector of Sri Lanka. The findings of this research corroborate that four out of five dimensions of experiential marketing - sense, feel, act, and relate - positively influence customer satisfaction at Pizza Hut establishments in Sri Lanka. Among these strategic experiential modules, relate marketing emerged as the most influential (β = 0.336), followed by act (β = 0.297), feel (β = 0.261), and sense (β = 0.084). These results are consistent with previous studies that have emphasised the significance of multisensory and emotional experiences in engendering customer satisfaction (Ellitan, 2022; Indrawati & Fatharani, 2016; Schmitt, 2010).

Notably, the study revealed that the think dimension did not significantly influence customer satisfaction, opposing previous

research that suggested its importance (Brakus et al., 2009). This unexpected outcome emphasises the necessity for further investigation into the role of cognitive engagement in the restaurant sector, particularly in the Sri Lankan market. It challenges assumptions regarding the universality of cognitive engagement in experiential marketing and presents new avenues for theoretical exploration.

This research contributes to the existing literature on experiential marketing in several ways. The study implies the applicability of Schmitt's (2010) Strategic Experiential Modules in Sri Lanka, thus extending the generalizability of this framework. Furthermore, the study offers empirical support for the relative significance of elements of experiential marketing in Pizza Hut, which develops the understanding of the complex interactions between these variables and customer satisfaction.

This study offers valuable insights to restaurant managers and decision-makers, especially global franchises expanding their business to emerging economies like Sri Lanka. Managers need to focus on developing experiences that are multi-sensory, emotional and behavioural. The high value of relate marketing indicates that the approaches promoting social relations and shared experiences of customers might be especially effective. Since the think dimension is insignificant, managers may have to reconsider incorporating the cognitive aspects into their experiential marketing strategies. They may have to look for more suitable contextual solutions. Out of the four elements, relate marketing

showed the most significant impact, yet a combination of all the sense, feel, act and relate elements would be most effective in achieving high levels of customer satisfaction.

This research has several limitations that offer possibilities for future investigations. The narrow scope, focusing on a single restaurant chain, restricts the broad applicability of the findings. Future research could focus on different restaurant categories or other food service establishments to give a broader view of the industry. The cross-sectional research design used in the study also restricts the findings in terms of the temporal dynamics of the experiential marketing effects. Such temporal patterns could be examined in long-term studies and could provide important information. Although this research focused on the experiential marketing dimensions, future research could examine how different contextual factors (like economic environment or level of urbanisation) affect the effectiveness of experiential marketing strategies.

The think dimension has been found to be insignificant, and further research should be conducted into this aspect. Perhaps qualitative studies could shed light on why this is the case and how cognitive aspects can be integrated into the concept of experiential marketing most effectively. Further research could also explore moderating factors such as demographic or psychographic characteristics of the customers on the effects of experiential marketing on customer satisfaction.

Thus, this research provides an understanding of the importance of

implementing experiential marketing concepts in enhancing customer satisfaction in the restaurant industry of developing markets, including Sri Lanka. This paper offers guidelines and suggestions to managers and decision-makers and stresses the importance of future research to improve these strategies in different settings.

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ACKNOWLEDGMENT

Green Marketing and Green Washing: A Narrative Literature Review

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ABSTRACT

Sustainability has emerged as a significant concern for societies, governments, and commercial enterprises. To improve sustainability, firms must successfully align their goals by integrating environmental considerations to their business strategies. This involves adopting various marketing tactics, called green marketing, to differentiate themselves in a competitive marketplace. Green marketing is the practice of promoting products or services that are environmentally friendly or have a positive impact on the planet by incorporating sustainability principles product design, packaging, production, and promotion. Research shows that more than three quarters of consumers cited a brand's sustainability and environmental responsibility as very important or moderately important in their choice of brands. Sri Lankan organizations also have initiated various green marketing initiatives. In addition to the growing popularity of green marketing, a novel concept known as "greenwashing" has also emerged. Greenwashing involves making an unsubstantiated claim to deceive consumers into believing that a company's products are environmentally friendly or have a greater positive environmental impact than they actually do. This paper undertakes a narrative review of literature to explore the concepts of green marketing and greenwashing globally and in Sri Lanka. Based on this review, we conclude that in the global context, many companies, including some of the world's most successful companies, are pursuing sustainable/green marketing strategies by implementing a marketing mix of environmentally friendly

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and ethically produced raw materials, recycling, reducing wastage, branding, packaging, and consumer education and communication. Global studies show that greenwashing is also highly prevalent. In the Sri Lankan context, there is research attention to green marketing but not to greenwashing. On green marketing, Sri Lankan companies seem to design marketing mixes to advance sustainable/green marketing. Literature review also revealed that green marketing has a significant impact on green consumer behavior and green product purchasing behavior among both global and Sri Lankan consumers. Present study highlights the importance to conduct research in Sri Lanka on company practices in greenwashing and effect of such activities on company profits, reputation, image and compliance with regulations, and, by extensive consumer surveys, on consumer perception, trust and skepticism on green marketing.

***Keywords* - Green Marketing, Greenwashing, Consumer Behavior**

1. INTRODUCTION

Sustainability has emerged as a significant concern for societies, governments, and commercial enterprises. This stems from the escalating environmental crises, including the accumulation of solid waste, depletion of the ozone layer, global warming, and air pollution (Karunarathna et al., 2017). Increasing apprehensions regarding environmental sustainability and climate change have compelled corporations to confront the task of incorporating environmental concerns into their corporate strategy and operations (Dangelico and Vocalelli, 2017). Understanding current

challenges related to social-ecological systems in environmentally sensitive areas is a complex task that necessitates meticulous and extensive research. The concept of "sustainability" is extremely relevant to this endeavor as it requires consideration of both social and ecological aspects and aims to extend current practices into the future (Sakalasooriya, 2021).

In order to enhance sustainability, companies must effectively harmonize their objectives by incorporating an environmental aspect into their overall profile (Kotler, 2011). The notion of green business is implemented as a solution, given its significant impact on economic, social, and environmental performance (Thevanes & Weerasinghe, 2019). Corporations are transitioning to a new approach to corporate governance by adopting sustainable business models that aim to minimize adverse effects on the global and local environment, the community, and the economy (Fernando & Fernando, 2017).

Currently, firms employ a range of marketing tactics to distinguish themselves and establish their position in the face of competition. Green marketing is a marketing strategy that current firms strive to adopt. Some of its methods are not easily replicated, and certain processes may be impossible for competitors to imitate or emulate. This motivates numerous firms to improve their performance and establish a distinctive place in the market. As a result, there is a change in the choice of bases that are being utilized for distinction. Green marketing has emerged as a significant distinguishing point for several firms

(Dangelico & Vocalelli, 2017). Green marketing, also known as ecological marketing, focuses on achieving long-term corporate success while prioritizing triple-bottom line profits, which include economic, social, and environmental benefits. Organizations are motivated to "go green" due to factors such as rising energy usage and prices, evolving consumer expectations towards environmentally friendly firms, and the concerns of stakeholders, including the general public (Fernando & Fernando, 2017).

The initial definition of green marketing was issued in 1975 by the American Marketing Association. They define green marketing as the promotion of products that are deemed to be ecologically safe. Green marketing encompasses various aspects of the marketing process, including as product development, manufacturing practices, packaging, and advertising modifications (Dangelico & Vocalelli, 2017; Francis, 2019). In addition, Mintu & Lozada (1993) defined green marketing as a strategic initiative aimed at safeguarding and sustaining the environment while simultaneously fulfilling the objectives of both corporations and individuals. Polonsky (2011) defines environmental marketing, often known as green marketing or sustainable marketing, as the strategic actions taken by a corporation to develop, advertise, price, and distribute products in a way that supports environmental preservation. According to Peattie (2004) marketers should not just focus on internal production processes, but also consider the effects of production and consumption on the quality of life and the advancement of a sustainable society. Further, green

marketing serves as a valuable instrument for monitoring, pursuing, and satisfying consumer wants and aspirations within the framework of environmental responsibility (Peattie, 2004).

In addition to businesses, consumers are also becoming increasingly aware of green concepts and are therefore showing a growing preference for engaging with environmentally friendly organizations (Laroche et al., 2001). Hence, numerous organizations are endeavoring to enhance the ecological impact of their business operations, and a few organizations have accomplished this by including eco-friendly characteristics into their products and services. Furthermore, green marketing is a strategic approach that aims to increase awareness and promotion of products and services that are environmentally friendly (Rahbar & Wahid, 2011). On this notion, green marketing is also seen as a mere marketing strategy rather than just an environmental protection instrument (FuiYeng & Yazdanifard, 2015), giving rise to consumer skepticism on organizations' green initiatives (De Jong et al., 2018). While striving to go green, merely using this concept as a marketing tactic rather than actually walking the talk has also gained recent attention, which has been captured in greenwashing related literature.

The notion of greenwashing has gained considerable prominence as firms increasingly distort their environmental initiatives to attract eco-aware consumers. This fraudulent behavior not only compromises authentic sustainability efforts but also compromises customer trust and

business responsibility. The demand for eco-friendly products among consumers has resulted in an increase in greenwashing as companies strive to gain a competitive edge (Jain et al., 2024).Further, Greenwashing can mislead consumers, undermine trust, and eventually damage the environment by distracting from authentic sustainability initiatives (Jain et al., 2024; Jeevan, 2017).

Therefore, the objective of the present study is to review existing literature on green marketing and green washing. Accordingly, the study aims to address the following research questions.

- How prevalent is green marketing, globally and in Sri Lanka?
- What actions are taken by firms to implement a green marketing strategy globally and in Sri Lanka?
- How prevalent is greenwashing globally and in Sri Lanka?
- What impact do green marketing and greenwashing have on the organization and consumers?

2. METHODOLOGY

The present study takes the form of narrative literature review on green marketing and greenwashing. Narrative literature review articles provide an overview and discussion on the current state of knowledge regarding a particular topic or theme, emphasizing theoretical and contextual perspectives. Unlike systematic reviews, these articles do not detail the databases searched, the methodologies employed, or the criteria used for selecting articles. Instead, narrative reviews involve a critical analysis of the existing literature, including both books and journal articles available in print or online (Rother, 2007). In a similar vein, Rajput and Datta (2020) conducted a narrative literature review on sustainable green manufacturing. The present study also follows similar methodology and therefore reviews the literature pertaining to green marketing and greenwashing in the global context and in Sri Lankan context to answer research questions above.

3. RESULTS AND DISCUSSION

3.1 Green Marketing and Greenwashing in the Global Context

Advancement in technology and acceleration in globalization have resulted in drastic changes in the consumption patterns of the people across the world, even bringing threats to the environment globally (Zhao et al., 2022). This has heightened the awareness of both organizations as well as consumers regarding the vitality of environmentally friendly products, service offerings and marketing strategies (Abbes et al., 2020). Individuals are compelled to embrace sustainable consumption behavior which is associated with individual's behavior that helps reduce their adverse impact on the environment (Dhandra, 2019). Due to such increased sustainable consumption patterns, organizations are directing their attention towards providing eco-friendly products and services to the customers (Ishaq & Di Maria, 2019). Over the recent decades, green marketing principles have emerged and evolved, reflecting a growing global concern revolving around environmental protection (González et al., 2015). Not being limited to

marketing, organizations have even embedded sustainability into business strategies, emphasizing its importance in achieving a competitive edge (Nguyen-Viet, 2022).

3.2 Green Marketing Related Products and Services

Integration of green marketing strategies has garnered significant attention across various industries. For many years, the hospitality industry has actively embraced eco-friendly measures to diminish its environmental footprint, integrating green attributes to service offerings (Han & Kim, 2010; Han et al., 2018; Wang et al., 2018). Among the extant literature pertaining to green marketing in hospitality industry, (Acampora et al., 2022) stated that certain studies focus on hotels while some other studies focus on various hospitality facilities. Authors in their systematic literature review mentioned that USA, China and Spain are the countries with the highest number of publications concerning green marketing in hospitality industry.

When considering other service sectors, Lymperopoulos et al. (2012) conducted a qualitative study pertaining to green marketing in the baking industry in Greece. Findings revealed that green product development and green processing are important aspects in this regard. Also, green corporate social responsibility emerged as a vital factor in green bank marketing. Authors further stated that green bank image is favorably influenced by green marketing. As for the retail sector, Mukonza & Swarts (2020) analyzed green marketing strategies in the retail sector by taking two retail giants

in South Africa into consideration. Results showed that green marketing strategies in the retail sector have positive impact on corporate image and firm performance.

In addition to the service sector, green marketing literature revolves around various products as well. Extant studies predominantly highlight the green marketing concerns and initiatives within fashion retail sector. Enormous environmental impact made by fashion industry also takes center of sustainability discussion. In order for the fashion industry to fully realize the benefits of a circular economy, drastic changes in business procedures are much needed. This also involves encouraging consumers towards circular products and services (Adamkiewicz et al., 2022). Stall-Meadows & Davey (2013) in a study conducted in United States of America (USA), found that among various environmental marketing claims, those related to using organic fibers in manufacturing and companies donating to green organizations had the most significant impact on reducing consumer price sensitivity. This means that consumers were more willing to pay higher prices when companies highlighted these specific environmental efforts. As far as the fashion industry is concerned, fast fashion is often being criticized in green marketing literature (Olson, 2022).

Nguyen-Viet (2023) investigated the impact of milk firms' green marketing mix tools on creating green customer-based brand equity (CBBE) in Vietnam. The findings indicate that green products positively influence both green satisfaction and green brand loyalty. Additionally, the study confirms that green promotion and green place are the most

crucial elements in building green CBBE in emerging markets such as Vietnam. These results suggest that companies should invest more in green marketing strategies and programs to enhance CBBE. Machová et al. (2022) assessed the green marketing initiatives and consumer behavior pertaining to parm oil products in among Slovakian consumers. As per the results, a weak relationship exists between consumers' awareness that a product contains palm oil and their opinions on purchasing them. Hence, to influence consumer behavior, it is suggested that companies should prominently label products as palm oil-free, leveraging negative emotional message about palm oil's environmental impact.

3.3 Green Marketing and Consumer Behavior

Consumers' individual perceptions and social factors would influence on their green consumer behavior. Accordingly, systematic review on green marketing conducted by Sharma (2021) analyzed 232 studies and found that key factors influencing green consumer behavior include concern for the natural environment, prior experience of consumers and perceived usefulness. On the contrary, barriers such as inadequate environmental knowledge, high prices, perceived risks, firm image, trust issues, and willingness to pay create a disconnect between consumers' attitudes and their actual purchasing behavior towards green products. Findings of Chan (2001) highlighted that among Chinese consumers, the participants' views regarding green purchasing are influenced by their degree of collectivism, ecological affect, and man-nature orientation, as well as by their

ecological knowledge to a lesser extent. Akbar et al. (2014) stated that their results show significant relationship of green purchase attitude, green perceived value, green trust and ecological knowledge on consumers' green purchase intention. Arli et al. (2018) revealed that the following factors influence customers' desire to buy green products: attitude (ATT), subjective norm, perceived behavioral control (PBC), pro-environmental self-identity (PEI), ethical obligation, and consumers' readiness to be green.

In addition to individual and social factors, various organizational activities also impact on consumers' green purchase behavior. Findings of Nguyen-Viet (2022) imply that eco-labels are useful communication tools for fostering green purchasing intentions and the development of green brand equity. Consumers may identify more ecologically friendly items and learn about the impact of their purchases on the environment with the use of eco-labels, which are visually appealing aids. Because it offers trustworthy information, consumers view an eco-label as a necessary assurance when making decisions about what to buy. Green marketing mix elements have been applied in green marketing related prior studies. Accordingly, Boztepe (2012) mentioned that green product features, green promotional campaigns of organizations and green price impact on green consumer behavior based on a study conducted in Istanbul. This was further confirmed by Mahmoud (2018) through research carried out in Sudan which revealed significant relationship between green marketing mix elements (green product, green price, green place and green promotion) and consumers' purchase

intention. Fuxman et al. (2022) developed a sustainable marketing model by giving a whole new definition to the extended 3Ps of the 7Ps concept. Preservation (Environment), Public (Society) and Performance (Economy) were added to the traditional 4Ps of product, price, place, and promotion.

The organizations need to adopt sustainable marketing strategies and the importance of integrating green marketing into modern business practices is highlighted in extant literature (Ng et al., 2014). In addition to the growing popularity of green marketing, a novel concept known as "greenwashing" has also emerged, given the significant effect that an organization's reputation on green marketing activities has on consumers' perceptions and behavioral intentions.

3.4 Green Marketing and Consumer Behavior

The term, "Greenwashing", was originally used in 1986 by Jay Westerveld, describes the act of deceiving customers about a product or service's environmental advantages (Alexa et al., 2022) which was brough into light when hotels began to ask their guests to reuse towels claiming that it's an environmental strategy in preserving water, whereas the said hotels have bigger environmental concerns that were left unaddressed (Pearson, 2010). The prevalence of greenwashing is likely to have adverse effects on consumers in their decision-making process, which would go against their environmental values. Accordingly, greenwashing has gained increased attention among academics, especially in the field of marketing (Santos

et al., 2023). The definitions of greenwashing laid down by various scholars are summarized in Table 1, as compiled and cited in a systematic literature review study conducted by (Netto et al., 2020).

Table 1. Definitions of Greenwashing

Authors	Definition on Greenwashing
Merriam-Webster's New Millennium Dictionary of English	"Practice of promoting environmentally friendly programs to deflect attention from an organization's environmentally unfriendly or less savoury activities".
Oxford English Dictionary	"Disinformation disseminated by an organization so as to present an environmentally responsible public image; a public image of environmental responsibility promulgated by or for an organization, etc., but perceived as being unfounded or intentionally misleading
TerraChoice (2010)	"The act of misleading consumers regarding the environmental practices of a company or the environmental performance and

	positive communication about environmental performance"
Delmas and Burbano (2011)	"Poor environmental performance and positive communication about environmental performance"
Baum (2012)	"The act of disseminating disinformation to consumers regarding the environmental practices of a company or the environmental benefits of a product or service"
Tateishi (2017)	"Communication that misleads people regarding environmental performance/benefts by disclosing negative information and disseminating positive information about an organization, service, or product"

Source: Netto *et al.* (2020)

Based on the above definitions, Netto et al., (2020) stated that core idea being highlighted in greenwashing is that organizations disclose positive information on their green activities while retaining the negative impacts made on the environment. Moreover, authors stated that greenwashing studies revolve around claims aspect of

greenwashing and executional aspect of green washing. A company's claims and declarations on the environmental advantages of its goods or activities are included in the claims part of greenwashing. These assertions are frequently overstated, deceptive, or completely false. Few examples include vague language, lack of proof and false labels. The way businesses physically and contextually portray their goods, services, or behaviors to look ecologically friendly, even when their true effect is not as green as implied—is known as the executional part of greenwashing. Green imagery and misleading visuals and a few examples of executional aspect of greenwashing. Following a systematic literature review, the authors present a typology of greenwashing activities by firms: product level claim, product level executional, firm level claim, and firm level executional.

3.5 Empirical studies on greenwashing in the global context

The empirical literature on greenwashing captures many facets, encompassing various industries. Greenwashing is ideally being looked at as a sheep in wolf skin, allowing organizations to continue deceptive practices under the guise of Corporate Social Responsibility (CSR) activities. Accordingly, Aggarwal & Kadyan (2014) studied the greenwashing score with overall CSR score while giving emphasis on cross sector analysis of greenwashing scores. Research findings stated that even the organizations claiming to have higher CSR scores may engage in some form of greenwashing. However somewhat contradictory findings were presented by

Parguel et al. (2011) in a study conducted in France, claiming that customers' perceptions of a brand's sincerity are severely impacted by low sustainability ratings. Therefore, this will have an adverse effect on corporate brand assessments in CSR communications. As a result, sustainability ratings may aid in discouraging "greenwashing" and motivate truly moral businesses to persist with their CSR initiatives.

Green marketing strategies are increasingly being incorporated into the website designs. On this notion, Szabo & Webster (2021) highlighted that could possibly lead to greenwashed websites. Authors studied this from consumers' perspective and results indicated that perceived greenwashing is negatively associated with happiness. Greenwashing does not appear to impact website interactions, such as mouse clicks. Specifically, websites featuring more interactive green elements tend to elicit higher levels of interaction from participants. Moreover, Aji & Sutikno, (2015) studied the consumers perspective on greenwashing in Indonesian context in general. Green consumer skepticism, Perceived consumer skepticism and green perceived risk affect the green trust of consumers which would the lead to switching intention.

As industry related studies are concerned, Rahman et al (2015) conducted a study pertaining to the hotel industry in USA, drawing upon the influential discounting behavior theory and cognition – affect – behavior (C-A-B) paradigm. The study revolved around linen reuse and the findings showed that consumers become skeptical of hotels' environmental promises, when customers feel that such claims are being made with hidden agendas. Customers become less inclined to engage in linen reuse programs and less likely to return to the hotel as a result of this distrust. In a study centered on cruise industry, de Jong et al. (2020) examined three types of greenwashing namely, outright lies, half-truths and firms taking credits for complying with regulatory standards. The findings revealed that both lies, and partial truths negatively affect organizational reputation. However, claims made regarding compliance with regulatory requirements did not significantly affect firm reputation. The study underscores the dangers of greenwashing tactics, which can eventually undermine trust, and stresses that only sincere environmental measures have a beneficial impact on customer impressions.

Greenwashing claims made by the fashion industry were highlighted by (Adamkiewicz et al., 2022). Accordingly, greenwashing involves claims of enhanced sustainability, downcycling, and guilt-free consumption. Sustainability claims of synthetic, ecolabeling, and certification to gain consumer trust are often demonstrated in the fashion industry. This is said to be worse as far as fast fashion is concerned (Alexa et al., 2022). Despite the increasing attention gained by the fast fashion industry, it is often criticized for the environmental impact it could have due to shorter production cycle, shorter product life cycle and rapid distribution. This approach was adopted by a few multinational fast-fashion retailers like Zara and H&M, who introduced new items into their stores every three to five weeks.

Among Chinese firms, Zhang et al. (2023) found that businesses with better

environmental performance are prone to less greenwashing, especially those that received subsidies for environmental protection. Compared to private companies, state-owned firms showed a more significant decline in greenwashing. Such difference may be attributed to their access to political resources and the positive reinforcement provided by the Chinese government. From a different perspective, Robertson et al. (2023) studied how greenwashing practices could impact on employees. Findings emphasized that employees with higher environmental knowledge are more adept at identifying greenwashing and are thus likely to have negative perceptions on employers which would even result in employee turnover.

Consumers' awareness on greenwashing claims is also an important factor. Jakubczak and Gotowska (2020) revealed in their findings that the consumers between the ages of 18 and 35 in Poland and Turkey do not completely get the notion of greenwashing. The majority of consumers were deceived by the packaging's "green colour", making them vulnerable to greenwashing practices. This is quite an eye-opener to study this phenomenon in other contexts as well. In the recent systematic literature review studies carried out on green marketing revealed that USA, India and China have been at the forefront in green marketing related publications (Acampora et al., 2022; Bhardwaj et al., 2023). Even concerning greenwashing related studies, Santos (2023) mentioned that most of the studies are centered in developed countries except for China and highlighted the need for more research in the contexts of developing countries.

3.6 Sustainable Management and Green Marketing in the Sri Lankan Context

The concept of "going green" has become a widely discussed topic among individuals from many backgrounds (Karunarathna et al., 2017). The Asian region has shown significant interest in the green revolution, and Sri Lanka is no exception. Sri Lanka is currently facing increasing levels of air pollutants, excessive dumping of rubbish, and high levels of road traffic noise and a rapid decline in available landfill space in most urban areas (Samarasinghe & Samarasinghe, 2013). The drive towards green (eco-friendly) activities is characterized as a means to eradicate the detrimental impacts of services. The discussion on the benefits derived from green marketing implies the rationale behind the preference for green marketing (Maheshwari & Birla, 2016).

In Sri Lanka, green marketing is an emerging discipline with potential for growth in a variety of domains, including infrastructure development, education, promotion, and development (Jayathilaka & Silva, 2018). From a marketing perspective, the 4P's of the marketing mix, consisting of product, price, place, and promotion, are widely used in product marketing. While service marketing is closely aligned with product marketing, it is important to take into account other factors. Hence, the marketing mix is expanded by include three additional components: process, physical evidence, and people, resulting in the definition of the 7P's of service marketing mix (Alwis & Manel, 2021). The current marketing mix must be converted into an

environmentally sustainable approach for promoting green products and services.

Green Brand Equity is one of the most competitive green marketing strategies. Green Marketing functions have a significant positive impact on green brand equity. Additionally, it was determined that the relationship between Green Marketing Functions and Green Brand Equity is influenced by the nature of the firm (Jayarathne & Gunawardena, 2022).

3.7 Green Marketing Related Products and Services in the Sri Lankan Context

The Sri Lankan service sector must prioritize the improvement of their reputation in green marketing in the future, as opposed to the past. They should also take into account the current situation in order to reap the advantages of embracing the green concept. In order to establish themselves as an industry, all businesses in the service sector must enhance their commitment to green marketing and ensure consistency between each business type and the 7P's (Alwis & Manel, 2021).

When considering the apparel sector in Sri Lanka, it is the primary source of export earnings, accounting for almost 40% of their total export income. The garment sector of Sri Lanka has incorporated environmental sustainability practices in six primary areas: energy and emissions, water and wastewater, solid waste, chemicals, biodiversity, and product (De Fonskea & Ismail, 2023). The Sri Lankan apparel business has been a leader in sustainable manufacturing for many years. Sri Lanka has emerged as a top choice for brands who prioritize the environmental effects of their

apparel. Sri Lanka takes great pride in being the owner of the world's first custom-built green garments factory, as well as Asia's first factory to be certified as carbon-neutral (De Fonskea & Ismail, 2023).

Green banking is an innovative technology-focused strategy effort adopted by Sri Lankan banks to generate business results that benefit the environment, society, and their financial performance. In these conditions, banks are essentially implementing digital and technology-focused banking services for their current and potential consumers, while also highlighting the bank's responsibility as a socially conscious company in working towards sustainable development. In this situation, the main tactic employed is the utilization of the term "green banking" as a means of promoting the brand. This involves introducing a set of banking services that are paperless and technology-focused to customers (P. M. P. Fernando & Fernando, 2017).

In addition to that, Sri Lanka's leading supermarkets occasionally implement diverse initiatives to promote environmental sustainability (Karunarathna et al., 2020). Providing clients with access to environmentally friendly products will have a beneficial effect on their intention to make environmentally conscious purchases. Furthermore, customers' environmental attitudes have a mediating role in the connection between green items and the intention to make environmentally friendly purchases (Karunarathna et al., 2020).

The adoption of environmentally sustainable methods in the hospitality sector is set to increase across Sri Lanka. The viability and

long-term success of the hotel industry can be contingent upon obtaining Green Certification. The majority of hoteliers clearly see the value of green certification as it enhances client demand and profitability. Green Certification mostly emphasizes energy conservation aspects. The green certification grade will be upheld by the green rating tool, which includes the following criteria: management, sustainable sites, water efficiency, material resources and waste management, energy management, indoor environmental quality, social and cultural awareness, innovation, and design. Green accreditation has grown increasingly significant in the hotel business as it aligns with the sustainable philosophy (Layanga et al., 2020). The use of green practices in the Sri Lankan hotel business significantly contributes to the country's economy by generating substantial cash. Sri Lankan hoteliers anticipate implementing ecotourism initiatives to attract a larger number of visitors, aiming to reach an annual total of 1 million visitors and fulfill sustainable objectives. The geographical location of Sri Lanka, along with its climate, wildlife, biodiversity, and beach attractions, attract tourists to migrate to the country. Hoteliers are reportedly eager to construct hotels in an environmentally friendly manner. The majority of the hotel business in Sri Lanka extensively use Green Globe and LEED certifications (Layanga et al., 2020). Wijewardena & Herath (2020) surveyed 384 customers who visited green certified hotels in Sri Lanka and found that green/eco-friendly activities, green practice communications and green image positively impacted corporate image of these hotels.

Sustainable methods are widely accepted and implemented in small and medium scale manufacturing companies (Matt & Rauch, 2013). Companies face both internal and external pressures to participate in environmentally responsible and eco-friendly operations, and hence to implement green practices. Several manufacturing small and medium enterprises (SMEs) in Sri Lanka have been seen to use environmentally friendly practices across their whole supply chain (Premaratna et al., 2021). The study demonstrates that external factors, such as regulatory pressure, governmental support, relative advantage, and compatibility of green practices, as well as internal factors, such as organizational support, quality of human resources, awareness, attitudes, and costs and benefits, have a substantial and positive impact on the adoption of green practices by urban manufacturing SMEs. Conversely, complexity has a detrimental impact on the adoption of green practices. Nevertheless, the growth of the company and the pressures from customers do not exert a substantial impact (Premaratna et al., 2021).

Susitha & Nanayakkara (2023) studied the impact of green supply chain management (GSCM) practices on the triple bottom line's economic, social and environmental performance of Sri Lankan apparel manufacturers and showed that GSCM practices positively affect the organization's triple bottom line while business size and duration moderate this relationship.

3.8 Green Marketing and Consumer Behavior in Sri Lankan Context

Consumer behavior is a crucial concept in the field of marketing. Colombage & Galahitiyawe (2020) identified strong positive correlations between emotional value, social value, and the intention to make green purchases. Marketers can utilize consumers' own value priorities as a segmentation attribute to determine distinct perceived value priorities. It is suggested that managers should not prioritize both the price and quality of green products when consumers are motivated to acquire these products due to social and emotional factors (Colombage & Galahitiyawe, 2020). Further, Wanninayake & Randiwela (2008) investigated consumer attitudes and perceptions regarding environmentally-friendly items in the fast-moving consumer goods (FMCG) market, as well as their readiness to pay for such products. The survey demonstrated that Sri Lankan consumers had a significant level of awareness regarding green products and are willing to incur additional expenses to purchase such products.

Further, it is indicated that green product awareness, green product benefits, green perceived value, and green product privacy & security have a significant positive impact on customers' intention to use green banking products in Sri Lanka. However, green product image and green product trust have a significant negative impact on customers' intention to use green banking products (Aruna Shantha, 2019). Further, it is found that whereas environmental affect is a substantial and weak predictor of green purchasing intention, environmental

knowledge is not a significant predictor. It also found that the intention to acquire green products has a partly intervening role in the association between environmental affect and actual green purchase behavior (Samarasinghe & Samarasinghe, 2013).

When it comes to impact of green marketing on consumer attitudes and consumer purchase intention, A study conducted by Jayathilaka & Silva (2018) indicated that consumers' cognitive interests in green marketing mix exhibit a negative correlation in numerous instances. Policymakers have the ability to take initiatives to raise public awareness about environmentally friendly products and implement policies to encourage green purchasing. In addition to acknowledging individuals, they can also fulfill their social obligation as a nation by promoting and educating society. The green place has a detrimental effect on customer cognition and a beneficial effect on consumer affection. This indicates that consumers do not consider the location of their purchases or visits, and they want to have an environmentally-friendly setting while buying green items. Nevertheless, it is imperative for policymakers to discern the preferences and demands of environmentally conscious consumers in order to advance this sector in the future. In particular, they have the ability to provide financial assistance to environmentally friendly producers, implement fresh regulations to curb the use of fertilizers, and establish novel eco-tourism sites to facilitate the growth of green marketing in Sri Lanka (Jayathilaka & Silva, 2018).

There are several factors affect the consumers' purchasing behavior.

Karunarathna et al. (2020) demonstrates that there are six key factors that contribute to the promotion of environmentally conscious purchasing behavior among young educated consumers. These factors include social influence, environmental attitude, environmental knowledge, perceived environmental responsibility, government initiative, and exposure to environmental messages through the media. Given the present lifestyle of people, there is a significant focus on eco-friendly products due to several concerns, including diseases and the preservation of the environment. Hence, marketers must implement market segmentation in order to achieve success in this fiercely competitive business environment.

Sandeepani et al. (2021) in a study of 150 consumers found that 82.7% of the respondents' trust and the majority (52%) of them normally purchase eco-labelled products; Females have more awareness of eco labels than their male counterparts; Females rely more on product information during the purchasing of eco-labelled products than males, and that females repeatedly purchase eco labelled products than their male counterparts.

3.9 Green Washing in the Sri Lankan Context

The businesses began to introduce sustainable products with the aim of establishing a sustainable market. Nevertheless, a number of individuals seeking to profit from this endeavor began deceiving consumers by falsely claiming that their fake and detrimental products are also sustainable and organic. The deceptive practice of misleading consumers, known as 'Greenwashing', has gained attention from most governments, who are currently focusing on mitigating its implications. Several countries have implemented rules specifically targeting the practice of Greenwashing. Despite the presence of green washing in Sri Lanka, the government and organizations responsible for addressing this issue have been unsuccessful in doing so (Bandara, 2022). Green washing can have many impacts on both the environment and customers. When examining the situation in Sri Lanka, one may observe the presence of several cosmetic products that claim to be the most environmentally friendly and sustainable, yet being packaged in plastic tubes or bottles. Concurrently, their websites have also featured pieces on environmental conservation. There are plastic water bottles that are labelled as 'eco-friendly' on the polythene label, as well as organic items packaged under polythene covers. Nevertheless, none of the authorities have acknowledged these enterprises as green washing companies. It is clear that despite the ubiquitous existence of Greenwashing in Sri Lanka, it has not been properly addressed (Bandara, 2022).

3.10 Regulatory Control of Greenwashing

Many countries have regulations for minimizing misleading green claims, but they usually focus on commercial practices only. For example, the US Federal Trade Commission produced the FTC Green Guides; the EU has issued the Unfair Commercial Practices Directive and a Guidance Document on its implementation; and in the UK, the Advertising Standards

Association Codes set forth requirements for responsible advertisement. The most recent effort is a Guidance on Green claims code by the UK's Competition and Markets Authority, which aims to help businesses comply with the law when making environmental claims. Non business entities, non-profits and government activities go unregulated (Nemes et al., 2022.) On the other hand, certain countries e.g., China, Canada and Singapore have not enacted a specialized law to regulate the marketing activities of greenwashing, but has regulated the same through its advertising law, consumer protection law, trademark law and anti-unfair competition law (Gowling, 2023).

In Sri Lanka, provisions of the Food Act; Intellectual Property Act; Cosmetics, Devices, and Drugs Act; Obscene Publications Ordinance; Consumer Affairs Authority Act; legislation protecting children; and the Code of Practice in Television Advertising of the Sri Lanka Rupavahini Corporation can be used to regulate misleading advertising. However, greenwashing is unlikely to be monitored under these laws especially in the absence of a specific regulation or an authority to govern the advertising industry (Fernando, 2022). Moreover, existing laws related to consumer rights and food safety are not sufficient to monitor greenwashing (Bandara, 2022).

4. CONCLUSION

Nevertheless, the emergence of green marketing has also drawn focus to the problem of greenwashing, wherein corporations may exploit environmental assertions primarily as a marketing strategy rather than a sincere dedication to sustainability. As a result, consumers have become skeptical and it is now necessary to carefully examine green projects (FuiYeng & Yazdanifard, 2015). The objective of this study is to investigate the extent to which green marketing practices are adopted in various industries worldwide and in Sri Lanka. It also seeks to analyze consumer attitudes towards environmentally-friendly purchasing behavior and evaluate their perceptions of greenwashing. While green marketing offers potential for promoting sustainable business practices, it must be approached with authenticity and transparency to avoid greenwashing pitfalls. Specially in the Sri Lankan context, literature review revealed that green promotion has a significant impact on green consumer behavior. Hence, it is important to identify the greenwashing perceptions and awareness of Sri Lankan consumers. Given the limited studies in Sri Lanka pertaining to greenwashing, this opens up future research avenues.

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Study of Role of Marketing Mix Elements in Building Customer Satisfaction and Customer Retention of Ayurvedic Products

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ABSTRACT

Sri Lanka is home to an assortment of leading companies which offers premium ayurvedic personal care products to both local and international markets. This research targets the study of the role of marketing mix elements in building customer satisfaction and customer retention of such Ayurvedic products with reference to a leading brand in Sri Lanka functioning under a renowned conglomerate. This study was developed with two main objectives accompanied by five hypotheses developed with reference to the impact of the 4Ps stemming from the marketing mix on customer satisfaction and the relationship between customer satisfaction and retention. A quantitative study was conducted with a structured questionnaire and the data was analyzed through a regression analysis to establish the relationships between the variables. The findings of the study present valuable insight regarding the application of marketing mix elements to study its role in customer satisfaction and customer retention for Ayurvedic brands. As per the analysis, the product mix has a strong significant impact on customer satisfaction followed by promotion, place and price. However, the relationship between customer satisfaction and retention is weak and this has significant implications for the firms operating in the ayurvedic industry. As per the findings, the product element of the marketing mix plays significant role in ensuring customer satisfaction and retention which implies that organizations must prioritize product quality and development. The findings of this study present significant contributions for organizations in the ayurvedic industry and paves way for further opportunities to expand the theoretical model through the inclusion of other variables and advanced analytical methods.

Keywords - **Ayurvedic Products, Marketing Mix, Customer Satisfaction, Customer Retention**

1. INTRODUCTION

The marketing mix, considered the core of an organizations' operations in delivering value to its consumers, is a long standing mix of concepts including the perspective of product, price, promotion and place. Despite the focus on the realm of marketing, research has brought forward the applicability and importance of the marketing mix in varying fields of business including brand management and financial value generation (Wichmann et al., 2022). However, through the years, the marketing mix has evolved with researchers redefining the 4Ps, expanding the components of the mix and developing alternative models (Lahtinen et al., 2019). Hence, this study brings forward the applicability of the marketing mix to improve customer satisfaction in order to ensure customer retention.

Empirical studies highlight the importance of customer satisfaction in establishing customer retention, through studies of various product, industry and country contexts (Torkzadeh et al., 2022; Lin et al.,2023). In recent empirical studies, there have been wide debates on the expanding gap between the academic studies and their practical applicability in industry (Mendis, 2024; Kieser & Leiner, 2009). Moreover, this study contributes to literature which supports the practical applicability of the theoretical marketing mix in understanding and answering industry issues.

This study takes into consideration the challenges of the ayurvedic product industry in the form of a case study on a product range of a conglomerate that operates in Sri Lanka. The segment of study which relates to manufacturing and distributing the ayurvedic products will be referred to as LA Products. To initiate the study, in order to identify the areas of concern from the perspective of managers of the LA Products, a pilot study was conducted where the plans for the company and the challenges which may occur in the foreseeable future were discussed. The managers stated that their plan is to give priority to gain highest sales from personal care category and continue to impress and retain customers with ancient ayurvedic products. Also, with further discussions held with the brand manager of LA Products, it was identified that there are several brands in the Sri Lankan market which are more competitive to the product. Based on those initial information, a pilot survey was conducted to get a basic understanding of what key criteria's that target consumers consider when purchasing LA Products and their experience with LA Products.

In the pilot survey, data was collected through a structured interview with the participation of 15 respondents. From that the following problems were identified,

1. Product quality of LA Products do not meet the customer expectation. (Taste of toothpaste and fragrance of other beauty care products)

2. Promotional campaigns that they do for promoting their products and, discount ranges and other strategies are not much effective to the customers.

3. There is a problem with prices of LA Products when compared with other competitive brands.

4. Customers cannot reach the LA Products from the nearest outlet and LA Products are not available enough to reach customers conveniently

Considering all the feedbacks received from the customers, most of customers were a bit disappointed about the value they got from using LA Products. Simply their opinion was LA Products didn't make them satisfied as expected. Because of that they tend to switch to other competitive products rather than retaining with LA Products.

Therefore, based on all the insights gathered from the background investigation and preliminary study conducted LA Products have not met the customer perceived quality of the product, customers receive insufficient promotions, there are issues related to the product distribution and there is a requirement to re-price the products. Therefore, the researchers recommend the application of the marketing mix (Product, Price, Promotion and Place) in the quest to address the problems identified with LA Products through improving the customer satisfaction and retention.

Despite the marketing mix being a concept dating back several decades, contemporary literature identifies the marketing mix to be applicable to the current context of modern marketing environments and recommends its application in empirical studies (Lahtinen et al., 2020; Viet, 2022; Chou et al., 2020). Subsequently, the research was undertaken as per the following questions;

1. What is the role of marketing mix elements towards customer satisfaction of LA Products?

2. Is there a relationship between customer satisfaction and customer retention of LA Products?

2. LITERATURE REVIEW

2.1 Marketing Mix

Marketing is a set of steps that deliver value that could be remembered by customers and can establish a relationship with customers as well as providing benefits to the organization (Armstrong & Kotler, 2011). Each firm strives to develop such a composition of 4Ps (Product, Price, Promotion and Place), which can create the highest level of consumer satisfaction and at the same time meet its organizational objectives (Caliskan et al., 2021). Literature identifies the marketing mix to be of importance in assisting businesses achieve their marketing target (Bay et al., 2008; Lahtinen et al., 2020). Elements in marketing mix; namely, product, price, place, and promotion (4P's) are the controllable tools that will contribute towards customers' satisfaction (Shankar & Chin, 2011; Sable 2013; Nguyen-viet, 2022).

2.2 Product Mix

Verma and Singh (2017) defined product "as a physical product or service to the consumer for which consumer is expecting to pay. This includes half of the material goods, such as furniture, clothing, and grocery items and intangible products namely services which users buy". The products are created by firms to fulfill customer needs and wants. These days, most companies must produce products which are appropriate for customers' needs by offering innovative products.

The product element of the marketing mix refers to the innovative value additions of the products and services offered by an organization (Alipour et al., 2018). A quality product projects solid impact on customer psychology and the acceptability of a product creates huge measure of satisfaction that inflames the feeling of loyalty in a customer and therefore one of the essential concerns of a customer is connected with the value of a product (Syafarudin, 2021). In any event, saving a triviality amount converts to

the priority of a customer if the quality standards of other products are comparatively similar and if the organization is unable to perceive the requirements of customers' values and quality standards, then the satisfaction and loyalty of the customer is in risk Product quality provides satisfaction and enhances competitive advantage and attracts the potential customers (Nuseir & Madanat, 2015; Kaswengi & Checchin, 2019). Customers tend to become satisfied by experiencing the quality (Al Muala & Al Qurneh, 2012). According to Sukamto and Lumintan (2015), positive development in the marketing mix namely product will significantly increase customer satisfaction. Previous studies also demonstrated that product has a positive effect on customer satisfaction (Tzeng et al., 2021; Kadhim et al., 2016; Bawa et al., 2013; Mustawadjuhaefa et al., 2017). Based on the above literature, this study proposes that;

H1: The product element has an impact on the consumer satisfaction of LA Products

2.3 Price Mix

The second most significant element in the marketing mix is the price. It can be identified as the value charged for any product or service (Borden & Marshall, 1959). Price, the amount of money that buyer has to sacrifice or pay in order to get the right and use of the product. Many consumers use price as a primary indicator of quality, higher-priced are perceived to possess high quality and vice versa (Kotler & Keller, 2009). Determining the product's price is a difficult job. The marketers should have to know that while fixing the price, so many factors like the need of a product, cost involved, consumer's ability to pay, government restrictions, prices charged by competitors for comparable products, etc. can control this process. In fact, pricing is a very critical and crucial decision zone as it has its impact on the need for the product and also on the profitability of the organization (Singh, 2012).

Price is a crucial factor for customer as well as for the organization also because pricing a product impacts both the parties. Organizations intend to secure their adequate profit and at the same time organizations can not afford the risk of gone clients due to high pricing (Auh & Johnson, 2005; Prasilowati et al., 2021). Poor pricing decisions grab good market opportunities from organizations of attracting new customers and the result appears in sheer financial decline (Khouja & Robbins, 2005). Price setting methods vary at national and international levels because the business aspects and customer choice contrasts from local markets. Some other factors also essentially influence pricing strategy and this includes overall investment of the organization, competitors' initiatives of pricing, market impact and customer behaviour of spending money (Lancioni, 2005; Kadhim et al., 2016; Bawa and Shameem; 2015; Alipour and Pour et al, 2018). Price and quality are connected with each other and customers need the exact return of their spending and this return is the higher quality of a product or service. Fully satisfied customers are willing to spend more but do not compromise on quality principles and standards (Goldschmidth & Chung, 2001; Tan & Le, 2023). Based on the above literature, the following hypothesis is developed;

H2: The product element has an impact on the consumer satisfaction of LA Products

2.4 Place Mix

According to Pordehghan (2015) "distribution refers to set of activities that are done to deliver a product or service to customers". Goods are produced to be sold to customers, they have to be made ready to the customers at a suitable place where they can handily and easily make deal. So, it is very important that the product is ready at markets in the city. This includes a network of persons and organizations like distributors, wholesalers and retailers who shape the distributing network of the organization (the channel of distribution). The organization must choose whether to sell directly to the persons or via the distributors (Burnett, 2008; Ji & Prentice, 2021).

Place is marketing mix phenomenon that is directly connected to customer satisfaction and loyalty. The strength of distribution channels of the organization will secure the competitive position of the business in the market. Timely productions, logistics and dispatch of products in the market to make it available and accessible for customer increment customers' confidence regarding the organization and such a quick mechanism of product delivery indicates distribution abilities of the organization (Bee, 2009; Jiang, 2019). Organizational supply chains, including suppliers, manufacturers, wholesalers, retailers, and end users, secure competitive positions, ultimately increasing the company's ability to satisfy target customers more efficiently (Nuseir & Madanat, 2015). Inconvenient location for the customers leads to dissatisfaction among the customers which further impacts the organization in a negative way (Niharika, 2015). Based on the above literature, this study proposes that;

H3: The place element has an impact on the consumer satisfaction of LA Products

2.5 Promotion Mix

Verma and Singh (2017) quoted that "the promotion of the marketing mix is a tool that helps disseminate information, encourage the purchase and affects the purchase decision process". Promotion is an activity that introduces and highlights key attributes of the products or services to customers which is an activity in offering, selling, and familiarizing the products to the consumers (Nuseir & Madanat, 2015). Promotion must be attractive and can encourage the consumers to buy and consume the products through creative strategy which suits the target customer base (Cahaya et al.,2023). If communication is delivered in an ineffective manner, the customers will not understand

the meaning of the message and will not interested to buy the product (Kotler & Keller, 2009; Akmal et al., 2023).

Promotion includes all the communication mediums that a marketer may insert into the marketplace. Promotion portrays the communication that marketers utilize to entice customers in the marketplace (Pasupuleti & Adusumalli, 2018; Prianggoro & Sitio, 2019). The promotion activity should be purely honest, with information based on truthfulness, transparency, and full sincerity for helping in increasing customer satisfaction (Niharika, 2015). The research studies that have been conducted by researchers also show that there is a positive linkage between promotion and customer satisfaction (Kadhim et al., 2016; Bawa et al., 2013; Alipour et al., 2018; Wahab et al., 2016; Verma and Singh, 2017). Based on the above literature, this study proposes that;

H4: The product element has an impact on the consumer satisfaction of LA Products

2.6 Customer Satisfaction and Customer Retention

Customer satisfaction is the key success element for a business entity (Adikaram & Khatibi, 2016). According to Kotler and Keller (2009) and Kotler et al. (2010) "a person's feelings of pleasure or disappointment that generate from comparing a product perceived performance (or outcome) to expectations". Khadka and Maharjan (2017) found out that customer satisfaction is dynamic and relative. In the process of improving customer satisfaction, customer expectations should be identified and it can be concluded that customer satisfaction is consumer's feeling and understanding about the performance of the product where consumers have expectation about the products and feel satisfy if the performance of the product exceeds consumer's pre-established expectations. Customer satisfaction is explained as the "summary psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with the consumers

prior feelings about the consumption experience" (Oliver, 1981). Customer satisfaction has significant implications for the economic performance of companies (Bolton, Lemon, and Verhoef 2004).

For instance, customer satisfaction has been identified to have a negative impact on customer complaints and a positive impact on customer loyalty and usage behavior (Bolton 1998; Fornell 1992). Customer satisfaction is viewed as a measure of the size, loyalty, and the quality of the customer base of a product. (Fornell et al. 2006; Morgan and Rego 2006). Customer satisfaction is a key measure of how a firm's product or services can meet or surpass customer expectation. Accordingly, Timothy et-al (2007) observed that satisfied customers tend to be loyal and retain, with less sensitivity to price changes and less attention to competition advertising. Customer satisfaction has traditionally been identified as a fundamental determinant of long-term consumer behavior (Oliver, 1980; Yi, 1990). Major theoretical, also empirical investigations during the 1970s, supported the idea that "satisfaction is related to the size and direction of disconfirmation experiences, where disconfirmation experience is related with the person's initial expectations" (Churchill & Carol, 1982). Satisfaction, conceptually, may be observed as an outcome of purchase and use which is the outcome of the customer's comparison of the benefits and costs involved in acquiring any product or service experience about the expected outcomes, whilst, in operational terms, satisfaction is similar to the attitude whereas it can be evaluated as the accumulated satisfaction experiences with the different attributes of the product (Churchill & Carol, 1982). Satisfaction is defined as degree of pleasure and gladness felt by customers resulting in fulfillment of customer's desires, expectations, and needs (Hellier et al., 2003). Stun and Thiery (1991) in their assertion maintain that satisfaction influences repurchase intention and satisfied customers are likely to be retained. According to that, Customer satisfaction has

been treated as one of the most important factors for all company and firms that provide products or services. It is a primary intention of almost all companies, to achieve customer satisfaction and through that the company will gain competitive advantages to stay survival. In addition, Marketers consider satisfying customers as a key element of business activities especially in competitive market (Anderson, 2005).

Customer satisfaction can be a fatal factor that affects any source of business and company performance. According to LaBarbera and Mazursky (1983), "satisfaction influences repurchase intentions whereas dissatisfaction has been seen as an initial reason for customer defection or discontinuation of purchase". When achieved customer satisfaction it may generate so many advantages. According to JochenWirtz (2003) customers are more likely to come back to repurchase product or services and generated customer loyalty as well as they will introduce the product to other people surround them, consequently this will increase the long term profitability of the company. On the other hand, Hoyer and MacInnis (2001) stated that dissatisfied consumers can decide to customer fallouts and negative word of mouth.

Customer retention is described as the future propensity of a customer to stay with the service provider (Ranaweera and Prabhu, 2003). Customer retention has been a significant topic since the mid-1990s (Ang & Buttle, 2006). The main purpose behind of a business is attracting customers and retain them within the organization. While examining customer retention, various clarifications and concepts are introduced with the intention of distinguish, classifying and establishing what are the important elements that comprise customer retention. Customer retention can be defined as how companies or organizations are able to maintain the current customers' base on establishing good relations with all who buy the company's product, (Kotler, 2008). Also, Ahmad and Buttle (2001) synthesis that customer retention is whenever a

customer does not leave or switch to other competitors. Many organizations invest the majority of their time and resources pursuing their business to acquire new customers. However, customer retention is much important than customer acquisition. In this way, organizations should focus on keeping customers and enhancing customer relationship (Weinstein, 2002). Regardless, organization should identify the right customers since they contribute most significantly to accomplishing their objectives. Ang & Buttle (2006) stated that right customers have the highest residual lifetime value to the organization. There is a relationship with nature between satisfaction and retention that have been studied by so many researchers and were observed that customer satisfaction is the mediating variable that might change the customers, whether they will become retained or not (Patterson, Johnson & Spreng, 1997; Bennett & Rundle-Thiele, 2004). Previous studies have also found that one of the major determinants of customer retention is customer satisfaction, which is in every business and market, customers need to be satisfied before they become retained (Parasuraman, Zeithaml & Berry, 1988; Lin & Wang, 2006).

While the customer satisfaction is measured through in terms of the fulfilment of the gap between customer expectation and customer actual experience, customer retention means the continuity of relationship between the organization and the customer (Ibojo &Asabi, 2015). Bowen and Chen (2001) underline the significance of customer satisfaction in order to ensure customer retention. Customer satisfaction has been recognized as a pivotal factor that affects customer retention (Ahmed et al., 2010; Danesh et al., 2012; Huppertz, 2008; Lombard, 2009; Omar et al., 2011). The linkage between customer satisfaction and customer retention has been examined by many researchers. Omotayo and Joachim (2008, p. 27) argued that although customer satisfaction is a key driver of customer retention, it is not always a means of

guaranteeing it. Hence, companies have to learn how to retain customers by not only considering their satisfaction. However, Alshurideh, Masa'deh and Alkurdi (2012) and Danesh et al. (2012) discovered that customer satisfaction has a direct effect on customer retention. Further, Rao, Goldsby, Griffis and Iyengar (2011) support the link between purchase satisfaction and customer retention. Based on the above literature, this study proposes that;

H5: Customer satisfaction leads towards customer retention for LA Products.

3. CONCEPTUAL FRAMEWORK

The framework in Figure 1, is developed as per the relationships between the marketing mix elements and consumer satisfaction as well as the relationship between consumer satisfaction and retention accentuated as per the review of literature. The conceptual framework has been developed with independent, mediating, and dependent variables to provide a comprehensive and clear understanding of the relationships between variables. In this study product, price, place and promotion (4Ps) are the independent variables, while customer satisfaction considered as mediating variable, customer retention would be considered as dependent variable. The conceptual framework of this research study can be presented in Figure 1.
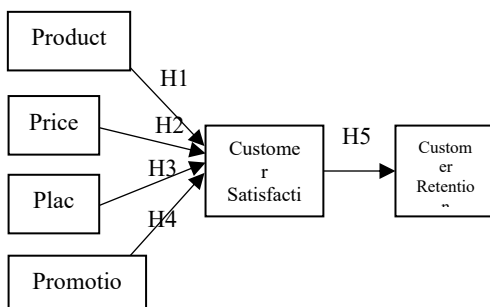
Figure 1.
Conceptual Framework
Source: Author Generated. (2024).

4. METHODOLOGY

This study was questionnaire adopted from predeveloped literature. As per existing studies, the operationalization of variables is presented in Table 1. Population of a study which includes the customers of the LA Products is approximately 100,000 customers as per the company. Hence, as per the Krejcie & Morgan's sample table, a sample of 380 customers are recommended for this study (Krejcie & Morgan, 1970; Verma & Verma, 2020).

5. DATA ANALYSIS

Data was cleaned using SPSS version 23 to identify missing values, ensuring the accuracy and reliability of the dataset used for analysis. A total of 20 missing values were identified, which is consistent with standard practice in quantitative research to ensure data quality (Hair et al., 2019). Consequently, only valid responses were considered for the data analysis, which is critical to maintaining the integrity of the statistical results (Field, 2018).

This research employed a structured questionnaire to gather primary data from 100 customers who consume LA Products in Sri Lanka. The sample size of 100 is adequate for generating statistically significant insights, as suggested by previous studies in similar contexts (Kline, 2015). The internal consistency reliability of the important variables was assessed using Cronbach's Alpha, a widely accepted method in social sciences for evaluating the reliability of constructs (Tavakol & Dennick, 2011). The reliability analysis revealed acceptable levels of internal consistency, further validating the robustness of the data collected.

Following the reliability assessment, the validity of the measures was tested using the KMO & Bartlett test. The KMO value exceeding 0.7 indicates that the sample size is sufficient for conducting factor analysis, aligning with the thresholds established in

psychometric literature (Kaiser, 1974). This suggests that the data is suitable for identifying underlying factor structures.

Table 2.

Descriptive Analysis

Statistics							
		product	price	place	promotion	customer satisfaction	customer retention
N	Valid	100	100	100	100	100	100
	Missing	20	20	20	20	20	20
Mean		2.6200	2.4267	2.3640	2.6625	2.6733	2.4950
Median		2.2500	2.3333	2.2000	2.2500	2.3333	2.2500
Std. Deviation		1.17555	.90649	.88003	.70297	1.15856	.64743
Variance		1.382	.822	.774	.494	1.342	.419
Sum		262.00	242.67	236.40	266.25	267.33	249.50

Source: Author

The descriptive statistics in Table 2 show that customer satisfaction had the highest mean value (M = 2.67), indicating a generally positive perception of LA Products among the sample. This is supported by research that highlights the importance of customer satisfaction as a key determinant of consumer loyalty in FMCG products (Oliver, 2010). Conversely, the price variable had the lowest mean value (M = 2.42), suggesting that price sensitivity may concern consumers, a finding consistent with studies on price perception in developing markets (Monroe & Krishnan, 1985).

The standard deviation for the product variable was the highest (SD = 1.17), indicating greater variability in responses, which may reflect diverse consumer preferences or experiences with different product types. This variability is crucial for marketers to understand, as it can inform product development and targeting strategies (Kotler & Keller, 2016). On the other hand, customer retention had the lowest standard deviation (SD = 0.647), implying more consistent responses, which

might suggest a stable customer base for LA Products (Reichheld & Sasser, 1990).

Table 3.

Age Group

Age Category	Frequency
18-28	27
29-39	27
40-50	19
51-61	13
62+	14

Source: Author

Table 4.

Gender

	Frequency	Percent
Male	48	48.0
Female	52	52.0
Total	100	100.0

Source: Author

As shown in Table 3, the majority of respondents were aged between 18 to 28 and 29 to 39 years, each group constituting 27% of the sample. This demographic trend is indicative of the growing consumption of FMCG products among younger age groups, a pattern well-documented in the literature (Young, 2015). Additionally, Table 4 highlights that the sample was almost evenly split by gender, with females representing 52% and males 48%. This gender distribution aligns with consumer behavior studies that show a relatively balanced consumption pattern of personal care products among males and females in South Asia (Sengupta, 2020).

The regional distribution of respondents, with the Western province representing 27% of the sample and the Central province 26%, underscores the importance of these regions as key markets for LA Products. The lower representation from the Northern province (7%) may reflect regional disparities in market penetration, an area that warrants further exploration (Fernando, 2017).

Table 5 shows that LA Products facewash was the most commonly used product among respondents (41%), followed by toothpaste (37%). These findings are consistent with market reports identifying facewash and toothpaste as high-demand FMCG products in South Asia (Euromonitor, 2023). The lower usage of LA Products face cream (10%) suggests potential areas for product development or targeted marketing strategies to boost consumer engagement with this product category (Kotler & Keller, 2016).

Table 5.
Products Type

	Frequency	Percent
LA Products toothpaste	37	37.0
LA Products facewash	41	41.0
LA Products Face cream	10	10.0
LA Products soap	12	12.0
Total	100	100.0

Source: Author

The Pearson correlation between product and customer satisfaction was found to be strongly positive (r = 0.994, p < 0.01), indicating a significant association. This finding aligns with the extant literature that emphasizes the critical role of product quality in driving customer satisfaction (Oliver, 2010). Similarly, the strong positive correlation between price and customer satisfaction (r = 0.908, p < 0.01) underscores the importance of pricing strategies in influencing consumer perceptions (Monroe & Krishnan, 1985). The correlations between place and customer satisfaction (r = 0.888, p < 0.01) and promotion and customer satisfaction (r = 0.622, p < 0.01) further highlight the multifaceted nature of consumer satisfaction, which is influenced by various elements of the marketing mix (Kotler & Keller, 2016).

The correlation between customer satisfaction and customer retention was positive but relatively low (r = 0.321, p < 0.01). This suggests that while customer satisfaction contributes to retention, other factors may also play a significant role, such as brand loyalty or switching costs, which have been explored in previous research (Reichheld & Sasser, 1990).

Table 6.
Correlation between customer satisfaction and customer retention

Correlations				
		customer satisfaction	customer retention
customer satisfaction	Pearson Correlation	1	.321**
	Sig. (2-tailed)		.001
	N	100	100
customer retention	Pearson Correlation	.321**	1
	Sig. (2-tailed)	.001	
	N	100	100
**. Correlation is significant at the 0.01 level (2-tailed).				

Source: Author

Multiple Regression

Multiple regression analysis was conducted to determine the effect of independent variables (product, price, place, and promotion) on the dependent variable, customer satisfaction. This statistical method is appropriate for examining the combined impact of several predictors on a single outcome variable, as recommended in the literature for marketing studies (Hair et al., 2019). The regression model summary presented in Table 7 shows an R-value of 0.996, indicating a very high correlation level between the independent variables and customer satisfaction. An R-value greater

than 0.5 generally correlates strongly (Field, 2018). The R-squared value of 0.991 implies that the model can explain 99.1% of the variance in customer satisfaction. This high R-squared value suggests that the model has a strong explanatory power, consistent with consumer behavior research findings (Kline, 2015). The adjusted R-squared value, which is slightly lower at 0.990, accounts for the number of predictors in the model and confirms that the model remains robust even after adjusting for the number of independent variables.

Table 7:
Model Summary

Model Summaryb				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.996 a	.991	.990	.10998
a. Predictors: (Constant), promotion, product, place, price				
b. Dependent Variable: customer satisfaction				

Source: Author

The ANOVA results in Table 8 indicate that the overall regression model is statistically significant ($F(4, 95) = 2722.881$, $p < 0.001$). This result confirms that the independent variables collectively have a significant effect on customer satisfaction. This supports the hypothesis that the marketing mix elements (product, price, place, and promotion) are important determinants of customer satisfaction in FMCG products (Kotler & Keller, 2016).

Table 8.
ANOVA Table

ANOVAa						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	131.735	4	32.934	2722.881	.000b
	Residual	1.149	95	.012		
	Total	132.884	99			
a. Dependent Variable: customer satisfaction						
b. Predictors: (Constant), promotion, product, place, price						

Source: Author

The coefficient table (Table 9) provides detailed insights into the contribution of each independent variable to customer satisfaction. The unstandardized B coefficient for the product is 1.005, indicating that a one-unit increase in the product variable leads to a 1.005 increase in customer satisfaction, assuming all other variables remain constant. This finding is statistically significant ($p < 0.001$), highlighting the crucial role of product quality in driving customer satisfaction, as established in previous research (Oliver, 2010).

Table 9.
Coefficient

Coefficientsa						
Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.244	.044		5.537	.000
	product	1.005	.026	1.020	38.761	.000

price	.052	.040	.041	1.291	.000
place	.074	.032	.056	2.290	.024
promotion	.095	.024	.058	3.943	.000
a. Dependent Variable: customer satisfaction					

Source: Author

The significance level of 0.000 suggests that there is virtually no probability of this result occurring by chance, thereby supporting the first hypothesis. For the price variable, the B coefficient is 0.052, implying that a one-unit price increase leads to a 0.052 increase in customer satisfaction, all else being equal. Although this effect's magnitude is smaller than the product variable, it remains statistically significant (p < 0.001). This finding aligns with the literature that emphasizes the nuanced impact of price on customer satisfaction, particularly in price-sensitive markets like FMCG (Monroe & Krishnan, 1985). The acceptance of the second hypothesis is, therefore, justified. The place variable has a B coefficient of 0.074, indicating that customer satisfaction increases by 0.074 units with a one-unit increase in place, ceteris paribus. This result is significant at the 0.05 level (p = 0.024), which suggests that the distribution channels and product availability also contribute positively to customer satisfaction (Kotler & Keller, 2016). The third hypothesis is thus accepted. Finally, the promotion variable shows a B coefficient of 0.095, signifying that a one-unit increase in promotion leads to a 0.095 increase in customer satisfaction. This result is statistically significant (p < 0.001), reinforcing the importance of promotional activities in enhancing customer perceptions and satisfaction (Blattberg & Neslin, 1990). Consequently, the fourth hypothesis is supported.

6. DISCUSSION

The summary in Table 10 shows that all five hypotheses developed in this research were accepted, indicating statistically solid support for the relationships among the studied variables.

Table 10. Key Findings of the Study

No.	Hypothesis	P-value	Result
H1	There is a positive significant relationship between product and customer satisfaction.	0.000	Accepted
H2	There is a positive significant relationship between price and customer satisfaction.	0.000	Accepted
H3	There is a positive significant relationship between place and customer satisfaction.	0.000	Accepted
H4	There is a positive significant relationship between promotion and customer satisfaction.	0.000	Accepted
H5	There is a significant positive relationship between customer satisfaction and customer retention.	0.001	Accepted

Source: Author

The first objective of this research was to examine the role of the 4Ps of the marketing mix—product, price, place, and promotion—on customer satisfaction with

LA Products. Previous studies suggest that while various factors, such as perceived quality, value, and service, influence customer satisfaction, the marketing mix is critical in shaping consumer perceptions and satisfaction levels (Nuseir & Madanat, 2015; Alipour et al., 2018). This study aimed to explore how each element of the 4Ps contributes to building customer satisfaction, particularly in the context of LA Products' Ayurvedic product offerings.

The first hypothesis (H1) investigated the relationship between the product and customer satisfaction. The findings revealed a significant positive relationship, with a correlation coefficient of 0.994. This strong positive relationship suggests that product quality is a critical determinant of customer satisfaction, consistent with prior research emphasizing the importance of product quality in customer satisfaction and loyalty (Sukamto & Lumintan, 2015; Kadhim et al., 2016). Customers perceive that LA Products meet their expectations in terms of quality, condition, visual appeal, and variety, which aligns with the literature indicating that a well-perceived product can significantly enhance customer satisfaction (Nuseir & Madanat, 2015).

The second hypothesis (H2) examined the relationship between price and customer satisfaction. The study found a significant positive correlation (r = 0.908), confirming that price plays a crucial role in customer satisfaction. This aligns with the literature that highlights the sensitivity of customers to price and the importance of pricing strategies that offer perceived value for money (Auh & Johnson, 2005; Khouja & Robbins, 2005). LA Products' ability to maintain reasonable prices while providing value for money has contributed to the positive relationship between price and customer satisfaction.

The third hypothesis (H3) explored the impact of place on customer satisfaction, and the results indicated a positive relationship (r = 0.888). This finding underscores the importance of effective distribution channels and product availability in enhancing customer satisfaction, as discussed in previous studies (Bee, 2009; Niharika, 2015). LA Products' ability to ensure retail and online availability, ease of access, and convenient purchasing options has been pivotal in satisfying customer needs, thereby confirming the hypothesis.

The fourth hypothesis (H4) investigated the relationship between promotion and customer satisfaction, finding a moderate positive correlation (r = 0.662). This result suggests that promotional activities, while important, have a more nuanced impact on customer satisfaction compared to other elements of the marketing mix (Pasupuleti & Adusumalli, 2018; Verma & Singh, 2017). LA Products' promotional efforts, including seasonal promotions and engaging advertising content, contribute positively to customer satisfaction, though there may be room for enhancing the effectiveness of these activities.

The fifth hypothesis (H5) examined the relationship between customer satisfaction and retention, revealing a significant positive correlation (p = 0.001). This finding supports the notion that satisfied customers are more likely to remain loyal, as indicated by earlier studies (Bowen & Chen, 2001; Ahmed et al., 2010). The results align with the literature highlighting customer satisfaction as a key driver of customer retention, although it is not the sole determinant (Omotayo & Joachim, 2008). LA Products' ability to meet or exceed customer expectations directly impacts customer retention, reinforcing the importance of continuous satisfaction in maintaining long-term customer relationships.

Given that product quality significantly influences customer satisfaction, it is recommended that the Sri Lankan branch of the conglomerate consider local preferences in their product development for LA Products. While the current product offerings are standardized across markets, tailoring the products to suit local tastes and preferences could further enhance customer

satisfaction and loyalty. This aligns with the literature emphasizing the importance of meeting local consumer needs in achieving higher satisfaction levels (Alipour et al., 2018).

The study's findings on the significant impact of price on customer satisfaction suggest that the conglomerate in Sri Lanka should carefully consider their pricing strategies for LA Products. As the literature suggests, effective pricing should balance competitive positioning with customer value perceptions (Khouja & Robbins, 2005). LA Products can strengthen its market position and enhance consumer trust and satisfaction by employing a strategic pricing model that considers local economic conditions and consumer expectations.

The positive relationship between place and customer satisfaction highlights the need for the conglomerate in Sri Lanka to improve the distribution network for LA Products. Expanding the distribution channels to include online marketplaces and broader retail coverage can increase product accessibility, improving customer satisfaction (Nuseir & Madanat, 2015). Enhanced distribution strategies are essential for reaching a wider customer base and ensuring product availability.

The moderate positive impact of promotion on customer satisfaction suggests that the Conglomerates strategic operations in Sri Lanka should refine its promotional strategies for LA Products. The literature supports that transparent and engaging promotional activities can significantly enhance customer satisfaction (Pasupuleti & Adusumalli, 2018). LA Products can strengthen its brand presence and customer engagement by focusing on more targeted and innovative promotional campaigns.

Given the strong linkage between customer satisfaction and retention, it is recommended that the conglomerate in Sri Lanka continue to prioritize customer satisfaction in its strategic initiatives. Ensuring high levels of customer satisfaction through consistent product quality, fair pricing, effective distribution, and engaging promotions will

likely lead to higher customer retention rates, as supported by the literature (Bowen & Chen, 2001; Ahmed et al., 2010).

7. Theoretical and Managerial Implications

The application of the marketing mix in the context of ayurvedic products contributes to the affirmation of the literature confirming the applicability of the marketing mix in modern contexts. Moreover, the study contributes towards answering the call of literature to apply the marketing mix to novel product and service segments. In addition, this study provides a unique verification of the applicability of theory in practice. Furthermore, the finding that th relationship between customer satisfaction and retention is weak emphasizes that satisfaction alone would not suffice in the ayurvedic industry. Hence, the findings of this study brings forth the need to adapt the customer satisfaction models to suit cultural significance of the industries studied. At length, the findings of this study implies the need to extend the traditional marketing mix models to include cultural variables when studying heritage related industries.

As per the findings of this study, it as revealed that the product element has the most significant impact on customer satisfaction. Subsequently, the promotion element was identified to have a strong significant impact on customer satisfaction. This highlights the importance of product innovations and communication regarding the authenticity, benefits of natural products and adherence to natural products as it would allow for stronger brand awareness which would enhance the possibilities of customer retention. Moreover, this study provides recommendations for LA Products which can ideally be applied for other such ayurvedic products as LA Products involves a wide range of ayurvedic products which hold common characteristics with other products in the industry.

8. AREAS FOR FUTURE RESEARCH

This study explores the impact of the marketing mix in the form of 4Ps, hence future studies can expand the model to include other elements that have been added to the marketing mix by recent studies such as &Ps and 10Ps. The ayurvedic methods practiced in Sri Lanka are unique to the Sri Lankan traditions and culture, similarly it is likely that other country contexts would include their own unique industries stemming from cultural contexts which can be studied in future studies. Furthermore, as the findings of this study highlight the importance of promotion in customer retention, future studies can explore the impact of promotional channels such as digital and social media marketing, loyalty programs and influencer endorsements. Finally, as this study was only a regression analysis, future studies can further test the model with advanced analytical techniques such as Structured Equation Modeling (SEM).

9. CONCLUSION

The ayurvedic product industry gained leverage in the Sri Lankan market in the recent years, giving rise to many enterprises which offered a wide range of modernized ayurvedic products. In the context of the Sri Lankan ayurvedic industry, this study considered the challenges faced by LA Products which is an established brand in the market which functions under a conglomerate. As per the internal survey conducted at LA Products, several issues were identified and the conceptual framework to address these issues were developed as the marketing mix. Hence, the study presented the findings from testing the model which demonstrated that the product, price, promotion and place elements of the marketing mix lead towards customer satisfaction which is thereafter related with customer retention. As per the findings of the study, it was discovered that the product

element has a significant impact on the customer satisfaction followed by promotion, place and price. Also, the findings revealed that the relationship between customer satisfaction and retention were weak, which implied that there is a requirement to take additional steps to retain customers with the ayurvedic brand. Hence, as per the findings this study recommended strategies to practitioners in the ayurvedic industry highlighting the importance of product and promotion as well as identifying the need to enhance the efforts taken to ensure customer retention through modern marketing techniques and product development. Similarly, the study contributed towards the existing lacuna in literature that did not address the application of the marketing mix in the ayurvedic industry and the addition of extensions to the marketing mix. However, the model can be further improved through future studies which incorporate extended versions of the marketing mix along with modern marketing concepts which address the trending strategies of marketing. Hene, this study brought forward an abundance of insights for practitioners and literature alike.

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The Relationship between Celebrity Credibility, Attitude Toward Brand and Customer Purchase Intention of Malted Milk Consumers in Western Province, Sri Lanka

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ABSTRACT

Celebrity endorsement is recognized as the most preferred marketing communication tool of modern consumers when enhancing brand recognition and customer purchase intention as well. The purpose of this study is to investigate the relationship between celebrity credibility, attitude towards the brand, and customer purchase intention of malted milk consumers in Western Province, Sri Lanka. It also fills the empirical gap in the literature, while making a valuable contribution to the very limited literature in Sri Lankan context on the relationship between celebrity credibility and purchase intention. The author adopted a quantitative research approach and collected data through a closed-ended questionnaire administered online. The sample population of the study was the malted milk consumers of Western Province aged between 18-60.

The snowball sampling method was used when selecting the sample out of the total population. The data for the study was collected from 441 respondents but only 424 were eligible for the study. Based on the statistical analysis done through SPSS, all four hypotheses developed were accepted. It was revealed that attitude towards the brand has reduced the strength of the direct relationship between celebrity credibility and purchase intention by acting as the mediator. This study not only fills the empirical gap but also provides valuable insights for academics, theoretical understandings, societal dynamics, and practical guidance for decision-makers and managers in various sectors to understand and address issues related to celebrity credibility, attitude towards brand, and purchase intention.

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Keywords - **Attitude Towards Brand, Celebrity Credibility, Malted Milk powder, Purchase Intention, Source Credibility**

1. INTRODUCTION

1.1 Background of the Study

In today's competitive business world, marketers are doing heavy advertising and other marketing activities to communicate their products and brands to their target market (Madhusanka, 2017). However, due to the intense competition in the market and as consumers are getting exposed to other various types of stimuli, it has extremely become difficult for marketers to grab the attention of their target market (Thomson, 2006). Therefore, marketers have to employ different types of marketing tools and techniques to seize the attention of their target market and stand out among the competition (Nasir et al., 2016).

Among the different tools and techniques, employing celebrities to endorse their brands has become very popular all over the world in recent years and has been identified as the most emerging, effective, and successful tool (Nasir et al., 2016). According to Silvera and Austad (2004), individuals who have gained widespread public recognition and who stand out for possessing unique attributes like attractiveness and trustworthiness are known as celebrities. Previous research has demonstrated that celebrity endorsements may have a significant positive impact on businesses by raising brand recognition, recall, and awareness as well as sales, profitability, and even market share (Bergkvist & Zhou, 2016). Celebrity endorsement also aids to make the product more recognizable from the other products and it enables more effective when delivering information about advertised products and services (Ahmad et al., 2020).

With the emergence of the digital environment in recent years, celebrity endorsement has increased and been widely used both in the local and global context (Nyamakanga et al., 2019). Based on the company reports and academic findings of Block and Atkin (1983), it is reasonable to say that when celebrities are employed by businesses whose public personalities align with the goods and target audiences, they are more effective when compared to non-celebrity endorsers producing all desirable results. Therefore, marketers endorse different celebrities to the products by spending millions of dollars to bring their magic to the products and services they endorse.

Sri Lanka is also a country where a significant amount of celebrity endorsement is done across different industries (Dissanayake & Weerasiri, 2017). The key celebrity endorsers used to promote brands are artists, singers, young models, and sports personalities who have gained whopping fame in society. Fast moving consumer goods (FMCG) industry is one of the key industries where celebrity endorsement is widely used. In both global and local contexts, each household spends a larger percentage of the monthly budget on FMCG (Vaishnani, 2011). Among the FMCGs, Malted milk has been perceived as a good business opportunity in the local market

where it has been in the Sri Lankan market for over a century (Nirushan & Saranya, 2017). However, in the promotional campaigns of Malted milk brands, celebrities like actors and actresses, musicians and sport personalities have been widely used by marketers in order to increase their sales and extend their market share (Nirushan & Saranya, 2017). However, consumers' attitudes play a crucial role in shaping their attitudes toward brands, including those endorsed by celebrities and has done a major impact on the effectiveness of the celebrity endorsements (Khattak et al., 2016). Therefore, understanding the impact of attitude on the effectiveness of celebrity endorsement becomes essential in the current landscape.

1.2 Problem Statement

Celebrity endorsement is a two-edged sword: if managed well, it may work wonders for the business, but if not, it might destroy the brand and the company's reputation by having a detrimental effect on customer purchasing decisions (Mudiyanse & De Silva, 2021).

Besides, Rajkhowa (2024) explained that celebrity's social image is having a high correlation to the image of the brand. Furthermore, Rajkhowa (2024) claimed that "any scandals or negative shifts in public perception surrounding the celebrity can have a disastrous impact on the brand". This statement provides believable evidence on how negatively socially associated celebrities could ruin the perception of the brand they endorsed. Likewise, there are few case studies from Sri Lankan Malted Milk Powder industry regarding the failures of

key malted milk powder brands such as Milo, Nestomalt and Viva (Nirushan & Saranya, 2017; Mudiyanse & De Silva, 2021).

A prominent case study of celebrity endorsement that was able to make a positive impact in the local malted milk context was Milo advertisements endorsed by the former captain of the Sri Lankan Cricket team, Angelo Mathews (Mudiyanse & De Silva, 2021). With the endorsement of Angelo Mathews, Milo was awarded the "Students Beverage Brand of the Year" in 2018 for the fourth consecutive year which was conducted with more than 9000 Sri Lankan students (Nestlé, 2018). This shows the high level of confidence the Sri Lankan customers hold for the product's quality and the attributes of the endorsers like Angelo Mathews. (Mudiyanse & De Silva, 2021). And also, the bad image created towards the celebrity can also give negative and bad publicity to the brand they endorse. One good example was the endorsement of Chathurika Peiris with Nestomalt (Mudiyanse & De Silva, 2021). Due to the personal problems of Chathurika Peiris in her family life, Nestomalt had to remove her from their advertisements as it could make a negative impact on the brand as Nestomalt is positioned as a family beverage drink. Therefore, they had to replace Chathurika Peiris with Roshan Ranawana and her wife (Sri Lanka Mirror, 2013).

Further, when referring to the social media posts of the respective malted brands in Sri Lanka, it was identified that there was a higher number of "haha" reactions for many celebrities than "heart" reactions which highlights a big problem about the

personalities of those celebrities. Specifically, it is unclear whether these endorsements are effective in generating a favorable attitude toward the brand and influencing consumers' purchase decisions. Therefore, this research problem can be taken as the foundation for further analysis of this topic.

Although a distinct number of research have been carried out in the area of "celebrity endorsement and consumer purchase intention" in both global and local contexts (Gunaratne et al., 2020; Koththagoda & Weerasiri, 2015; Nirushan & Saranya, 2017; Madhusanka, 2017; Mudiyanse & De Silva, 2021; Priyankara et al., 2017; Sachitra & Poornima, 2020; Udovita, 2019). None of the study found with the mediator of "attitude towards the brand" in the top cited articles with respect to celebrity endorsement and purchase intention of consumers in the Sri Lankan context. Therefore, it opens an empirical gap for the author to conduct its research.

Despite the fact that different celebrities are widely endorsed by different malted milk brands in Sri Lanka when promoting their products, the question is; "were they able to create a positive attitude towards the brand and make influence the consumer's purchase decision?". Therefore, the aim of the author in this study is to investigate the relationship between celebrity credibility, attitude towards the brand, and customer purchase intention of malted milk products among Sri Lankan customers while closing the above-identified empirical gap.

1.3 Objectives of the Study

1. To identify the impact of celebrity credibility on attitude towards the brand of malted milk consumers in the Western Province of Sri Lanka.

2. To identify the impact of attitude towards the brand on customer purchase intention of malted milk consumers in the Western Province of Sri Lanka.

3. To identify the impact of celebrity credibility on customer purchase intention of malted milk consumers in the Western Province of Sri Lanka

4. To identify the impact of attitude towards the brand as a mediator between celebrity credibility and purchase intention malted milk consumers in the Western Province of Sri Lanka.

2. LITERATURE REVIEW

2.1 Purchase Intention

According to (Bosnjak et al., 2006), purchase intention is the consumer's tendency and the desire that strongly urges them to buy a good or a service. Kalia et al. (2016) interpreted purchase intention as the customer's attitudes and actions that are being strongly impacted by numerous activities which persuade them to buy a product. However, it is not always positive. In some situations, the buyer is hesitant to buy the product thinking that there is a danger associated with it. In such situations, the consumer might be less motivated to make the purchase or repurchase it (Wang & Hazen, 2016). Whereas a positive attitude towards the product, perceived benefits, and

user-friendliness can increase the purchase intention of the consumer (Venkatesh et al., 2012). According to Choi and Rifon (2012), the marketer's aim in endorsing celebrities with the products is to enhance the perceived quality of the product, brand recognition, and maximize sales. The majority of studies were able to identify a strong relationship between celebrity endorsement and purchase intention (Chin et al., 2019; Erdogan, 1999; Ohanian, 1991; Putri & Roostika, 2022; Singh & Banerjee, 2018; Wang et al., 2017). Consumers who are exposed to celebrity-endorsed products had more positive and favorable attitudes and opinions about the products and were more inclined to purchase the product (Erdogan, 1999; Ohanian, 1991). Also, celebrity-endorsed products were able to show more favorable results on attitude towards advertising and purchase intention than non-celebrity-endorsed products (Atkin & Block, 1983). Therefore, correct celebrity selection would help to optimize the beneficial effects of celebrity endorsement on marketing strategy and increase sales by increasing the purchase intention (Choi & Rifon, 2012).

2.2 Celebrity Endorsement

Celebrity endorsement refers to the employment of well-known personalities to support a specific product or brand (Adyatam & Krisjanti, 2015). It has been identified as a very impactful marketing tool as it helps to boost sales, enhance brand awareness, and create a favorable attitude toward the brand (Adyatam & Krisjanti, 2015). When reaching the target market in an effective and efficient manner while gaining the immediate attention of the target market within a short period of time,

celebrity endorsement is identified as one of the effective tools (Adyatam & Krisjanti, 2015). Therefore, celebrity endorsement is frequently used by companies when reaching their objectives both strategically and financially (Keller & Swaminathan, 2020; Riezebos & Kist, 2003). Celebrities are picked for the advertisements not just based on their fame, but also by considering many other attributes of celebrity (Jamil & Hassan, 2014). Endorser's physical attractiveness, credibility, expertise knowledge, the match between celebrity image and brand, likeability, skill, and talent of the celebrity are also big count for the social acceptance of those celebrity-endorsed advertisements (Erdogan et al., 2001; Gupta & Kumar, 2007; Hakimi et al., 2011; McCracken, 1989).

2.3 Celebrity Credibility and Source Credibility Model

The credibility of the endorsed celebrity is considered to be a key component in advertising, and it has become a great concern among marketing professionals when choosing the right celebrity (Jeon, 2018). Celebrity credibility is an extensively studied area in marketing communication (Kumar & Tripathi, 2019). When the celebrity is perceived to be credible, the brand will also be perceived as credible by the consumers (Shezi, 2022). According to Daneshvary and Schwer (2000), consumers do not accept the sources and purchase the products just because they offer solutions to the problems, but also because of the credibility of the source. A credible celebrity can make a positive impact on both the acceptance of the message and the degree of

persuasion (Belch & Belch, 2003; Pornpitakpan, 2004).

The source credibility model which was introduced by Hovland and Weiss (1951) and further developed by Ohanian (1991) can be considered the most appropriate model when talking about the credibility of a celebrity (Goldsmith et al., 2000; Ohanian, 1990). Initially, in the study of Hovland and Weiss (1951), he focused mainly on two dimensions: trustworthiness and expertise. Later in the study of Ohanian (1991), he incorporated attractiveness into the model and expanded it. Ohanian pointed out that earlier studies on source attractiveness and source credibility utilized several metrics to assess the overall credibility of sources (Pornpitakpan, 2004). Even though all of these studies aimed to evaluate one solid construct, there was a lack of consistency among the researchers as to what factors comprised source credibility. Additionally, most of the previous research did not evaluate the validity and reliability of the scales inside their models. As a result, there were discrepancies in the literature on source credibility, which prompted Ohanian to create a reliable credibility scale (Pornpitakpan, 2004). The latest source credibility model introduced by Ohanian (1991) is employed with two foundational source models namely the source credibility model introduced by Hovland and Weiss (1951) and the source attractiveness model introduced by McGuire (1985). So, in the study of Ohanian (1991), he identified that credibility depends on the attractiveness, trustworthiness, and expertise of the celebrity.

2.3.1 Attractiveness

Attractiveness can be identified as the physical appearance, likeability, and similarity of the celebrity to the target market (Moraes et al., 2019). In the study of Ohanian (1991), he defined attractiveness as the combination of being smart or not, gorgeous or ugly, elegant or plain, or sexy or not sexy. The physical appearance of celebrity endorsers is highly regarded and accepted by society, and it serves as a source to gain the attention of its viewers (Ohanian, 1991). An attractive celebrity has the power to grab the attention of the target market and directly affect the efficacy of the communicated message by the endorser (Khalid & Siddiqui, 2018). Also, it is stated that attractive celebrities are having a higher chance of making an impact on the purchase intention of consumers (Waldt et al., 2009).

2.3.2 Trustworthiness

Trustworthiness can be defined as the honesty, integrity, and level of believability the listeners have toward the communicator (Gupta et al., 2017). So, if the customers are having trust in the celebrity endorsed by the brand, it will be more influential, and the organization will have the chance of changing the customer attitude towards the brand in a desirable way (Miller & Baseheart, 1969). According to (Shimp, 2003), the reason why a target audience trusts a celebrity endorser is because of the professional and personal lives that the celebrity lead and that is made public through the mass media. An increase in the level of trustworthiness of the celebrity can help the brand to increase the trustworthiness of consumers towards

themselves. Therefore, the endorser must be able to communicate honest and trustworthy information to its customers (Erdogan et al., 2001).

2.3.3 Expertise

According to Ohanian (1991), expertise can be identified as the level of authority a celebrity has in a certain product category. A celebrity becomes an expert when he/she has sufficient knowledge and skills to market or promote a product (Radha & Jija, 2013). And they must promote goods that are associated with subjects that have made them well-known to others (Biswas et al., 2006). The dimensions that are considered for a celebrity to be an expert are the experience, knowledge, and skills that are congruent with the endorsed product (Kazmi, 2020). An expert is more persuasive and able to increase consumer purchase intention than a non-expert (Ohanian, 1991). Also, it has been found that a celebrity who is perceived to be an expert in the field of that promoted product can enhance credibility (Erdogan, 1991). When the endorsed celebrities are perceived to be less expert or have less knowledge on the endorsed product, they are seen as less credible celebrities and are less effective on making influence on the attitude of the consumers and purchase intention (Till & Busler, 2000).

2.4 Attitude Towards Brand

Attitudes are a combination of beliefs, experiences, and feelings that are combined to create a predisposition for people to behave in a certain way (Chandon, 2011) and they are considered to be relatively stable (Adyatami & Krisjanti, 2015). A variety of factors, including product quality, brand image, promotion, pricing, and personal experience, can affect one's attitude toward a particular brand (Smith & Aaker, 1992).

According to Phelps and Hoy (1996), customers' attitudes toward the brand are predispositions that concentrate on either the positive or the negative effect on a particular brand after viewing an advertisement. The attitude of the customer towards the brand is directly associated with customers' feelings and the positive or negative attitude will make a direct impact on the purchase intention of the customer (Ha & Lam, 2017). When consumers think favorably on the attributes or uses of the brand, it will lead them to form a more positive attitude towards the brands (Putri & Roostika, 2022). Furthermore, a positive attitude towards a brand can result in increasing brand loyalty, positive WOM and repeat purchases while a negative attitude towards the brand can affect the other way round (Keller, 1993).

2.5 Celebrity credibility and attitude towards brand

Preceding investigations offers strong evidence that a high-credibility endorser will have a noticeable positive impact on customers' attitudes toward the brand in comparison to a brand backed by a low-credibility endorser (Jin & Phua, 2014). In Erdogan (1999) stated that celebrity endorsement has the power to improve customers' attitudes toward brands. Similarly, in the study of Choi and Rifon (2012), it was found that consumer attitudes toward a brand were shown to be favourably

impacted by the celebrity endorser's and the brand's attitude congruence. This impact was higher when the celebrity endorser was perceived to have a high level of credibility. Also, studies have looked at how different aspects of celebrity credibility affect customers' attitudes towards brand. Ohanian (1990) designed a scale to evaluate celebrities' perceived attractiveness, trustworthiness, and expertise. And in his study, he found that all these three dimensions are having a positive impact on the attitude towards the brand (Ohanian, 1991). Overall, it suggests that celebrity credibility is a key element in determining the effectiveness of celebrity endorsement. However, the amount of research on the relationship between celebrity credibility and attitude towards brand is very limited. Therefore, the proposed hypothesis for this study based on celebrity credibility and attitude towards brands are as follows.

H1- There is a significant relationship between celebrity credibility and attitude towards brand on Malted milk consumers.

2.6 Attitude Towards Brand and Purchase Intention

Attitude towards the brand plays a vital role in shaping and influencing the purchase intention of the consumers (Gresham & Shimp, 1985; Goldsmith et al., 2000). Compared with the consumers who are having a negative attitude towards the brand, the consumer who has a positive attitude are more likely to have a stronger purchase intention (Erdogan, 1999). The majority of the previous research findings have shown a positive and significant relationship between attitude towards the brand and purchase

intention (Mitchell & Olson, 1981; Gresham & Shimp, 1985; Batra & Ray, 1986; Phelps & Hoy, 1996). Several research by taking adults (Machleit & Wilson, 1988; Homer, 1990) and children (Phelps & Hoy, 1996) as separate samples have also shown that the attitude towards the brand is having a positive and significant impact on the purchase intention.

H2- There is a significant relationship between attitude towards brand and purchase intention on Malted milk consumers.

2.7 Celebrity Credibility and Purchase Intention

Previous research has shown that celebrity endorsements increase consumer intention to purchase (Daneshvary & Schwer, 2000; Friedman et al., 1976; Kamins, 1990; Knight & Young Kim, 2007; Pradhan et al., 2014). And consumers' purchase intention is even higher when the endorsed celebrity is perceived as a credible endorser (Lafferty & Goldsmith, 1999). When credible celebrities are utilized in advertisements as endorsers, it can impact customer beliefs, judgments, attitudes, and behavior. This can encourage the customer to take the information communicated as accurate and put it to use when making a purchase decision (Pornpitakpan, 2004). Many studies show that the perceived credibility of the celebrity endorser is significant and that there is a positive relationship between celebrity credibility and purchase intention (Erdogan, 1999; Jin & Phua, 2014; Atkin & Block, 1983).

H3- *There is a significant relationship between celebrity credibility and purchase intention on Malted milk consumers.*

3. METHODOLOGY

Current study deployed positivism, since the study was based on an already tested theory which was the Source Credibility Model. Further, this study is cross-sectional since the data was collected only once from the selected set of respondents who are residing in the Western Province of Sri Lanka. This research is mainly based on quantitative data gathered through a closed-ended questionnaire administered online to the respondents. Snowball sampling method deployed as the sampling technique (Heckathorn, 2011). The current study was conducted mainly with reference to the consumers who have purchased malted milk in the Western Province of Sri Lanka. And the age group considered in this study was the respondents who were aged between 18-60 which is considered as the working population of the country (BIPO TIMES, 2022). Based on Cityfacts (2015) the population of the Western province between 18-60 is approximately 3,964,382. Therefore, the recommended sample size for this study was 385.

4. DATA ANALYSIS AND RESULT

4.1 Data Entry, Coding, and Purification

After full data collection from 441 respondents, the data purification was done by checking for missing data and outliers. No missing values and extreme outliers were found in the data set. But 16 neglectable outliers were found, and the author had to remove them in order to ensure that the data

set is further clean and accurate and to prevent potential biases or errors. After removing the neglectable outliers, one respondent who was aged above 60 was found and removed as it was considered not to be the sample of the study. After removing those responses from the data set, the remaining 424 responses were used for further analysis.
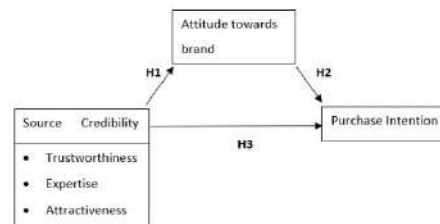
4.2 Demographic Analysis

According to the results, the gender distribution in the survey was fairly evenly split between the two genders. There were 209 female respondents and 215 male respondents. Further, the majority are aged between 18 and 24 which is 55.4% (235), while the minority of the respondents were aged between 54-60, which is 5.2% (22). Further, the majority of the respondents were having an income below 25,000 (187), while the minority are having an income level between 75,000-100,000 (30). The results also highlighted that, out of the 424 respondents, 279 were living in the Colombo district which is 65.8% of the total number of respondents which represents the majority. While 95 respondents and 50 respondents were living in Gampaha and Kalutara districts respectively.

4.3 Reliability Analysis

Reliability analysis was done by the author in order to measure the internal consistency and the stability of the data over time (Hair et al., 2014). According to (Hair et al., 2016), it suggests that Cronbach's alpha value should fall between 0 and 1, while a value above 0.7 is ideal to confirm the internal consistency and the stability of the data set.

Table 1 Cronbach's alpha value table

Variable	No. of items	Cronbach's Alpha Value	Result
Overall Celebrity Credibility	15	.907	Excellent
Attractiveness	5	.865	Good
Expertise	5	.879	Good
Trustworthiness	5	.862	Good
Attitude Towards Brand	4	.871	Good
Purchase Intention	6	.877	Good

**Excellent= $\alpha \geq 0.9$, Good= $0.9 > \alpha \geq 0.8$, Acceptable= $0.8 > \alpha \geq 0.7$

Source: *Author compiled.*

Based on the results, it is observed that overall celebrity credibility has obtained an excellent result as Cronbach's alpha value is higher than 0.9, while all the other variables have obtained a good result as they are between 0.8 and 0.9. So, this indicates that the items under each variable are related to each other. The key reason to get successful Cronbach's alpha values is that all items for this study were adopted by the author from the previous studies.

4.4 Correlation Analysis

Correlation analysis can be identified as the method which is used in order to identify the relationship between the variables (Saunders et al., 2009). For this, Pearson's correlation coefficient is used which can be identified as the commonly used statistical method when analysing the relationship between two continuous variables.

Table 2 Pearsons Correlation scores

Correlations		CC	ATB	PI
CC	Pearson Correlation	1	.662**	.620**
	Sig. (2-tailed)		.000	.000
	N	424	424	424
ATB	Pearson Correlation	.662**	1	.643**
	Sig. (2-tailed)	.000		.000
	N	424	424	424
PI	Pearson Correlation	.620**	.643**	1
	Sig. (2-tailed)	.000	.000	
	N	424	424	424

**. Correlation is significant at the 0.01 level (2-tailed).

According to the results, it shows that all three relationships are statistically significant with a p-value less than 0.05 (p=0.000). And their r values fall between 0 and +1, which denotes a positive relationship between the variables. Therefore, the first three null hypotheses (H01, H02, H03) of the study are rejected and a significant positive relationship can be seen.

4.5 Regression Analysis and Hypothesis Testing

4.5.1 Assessment of direct relationships

In this study, the author has employed several analysis methods in order to test the four hypotheses developed for the study. The first three hypotheses (H1, H2, H3) which talk about the direct relationship between the variables were analyzed and measured through Multiple Regression.

Table 3 Hypothesis Testing

Hypothesis	β	Sig.	Accepted or rejected
H1- There is a significant relationship between celebrity credibility and attitude towards brand on Malted milk consumers.	.662	0.000	Accepted
H2- There is a significant relationship between attitude towards brand and purchase intention on Malted milk consumers.	.414	0.000	Accepted
H3- There is a significant relationship between celebrity credibility and purchase intention on Malted milk consumers.	.346	0.000	Accepted

**Source**: *Author compiled.*

H1- Accepted

Based on the multiple regression analysis, the relationship between CC and ATB is significant (p = 0.000) and positive as the coefficient β value is 0.662. Therefore, it determines that there is a significant positive relationship between celebrity credibility and attitude towards the brand on the malted milk consumers in the Western Province of Sri Lanka. As a result, the null hypothesis (H01) gets rejected and the alternative hypothesis (H1) gets accepted.

H2 – Accepted

The relationship between ATB and PI is significant (p = 0.000) and positive as the coefficient β value is 0.414. Therefore, it determines that there is a significant positive relationship between attitude towards the brand and the purchase intention of the malted milk consumers in the Western Province of Sri Lanka. As a result, the null hypothesis (H02) gets rejected and the alternative hypothesis (H2) gets accepted.

H3 – Accepted

The relationship between CC and PI is significant (p = 0.000) and positive as the coefficient β value is 0.346. Therefore, it determines that there is a significant positive relationship between celebrity credibility and purchase intention of malted milk consumers in the Western Province of Sri Lanka. As a result, the null hypothesis (H03) gets rejected and the alternative hypothesis (H3) gets accepted.

4.5.2 Assessment of Mediating Effect

The author has deployed the PROCESS Macro in order to identify the impact of the mediating role of Attitude Towards Brand (ATB) on the relationship between Celebrity Credibility and Purchase Intention

H4 – Accepted

It indicates that ATB mediates the relationship between CC and PI as the confidence intervals do not contain zero (BootLLCI and BootULCI are 0.2037 and 0.3484), which shows a significant impact. Further, the findings suggest that there is a partial mediation effect of ATB on the relationship as both the significant values of direct and indirect effects are significant. The effect size of the mediator on the relationship between CC and PI is 0.2740. Therefore, it determines that attitude towards the brand mediates the relationship between celebrity credibility and purchase intention on malted milk consumers in the Western Province of Sri Lanka although the presence of the mediator (ATB) has decreased the direct relationship from 0.6204 to 0.3463. As a result, the null hypothesis (H04) gets rejected and the alternative hypothesis (H4) gets accepted.
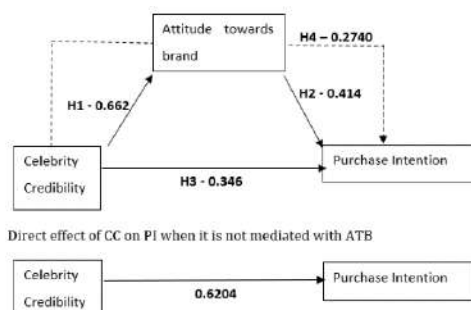
Figure 1 Mediating role of ATB on the relationship between CC and PI

5. DISCUSSION

5.1 Relationship between Celebrity Credibility (CC) and Attitude Towards Brand (ATB)

In this study, the author has taken the three dimensions of celebrity credibility (attractiveness, expertise, and trustworthiness) as one single variable.

Table 4 PROCESS Macro results (H4)

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******* TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **'
Total effect of X on Y
    Effect    se      t        p      LLCI   ULCI   c_cs
    .7861   .0484  16.2489  .0000   .6910  .8812  .6204

Direct effect of X on Y
    Effect    se      t        p      LLCI   ULCI   c'_cs
    .4389   .0594   7.3941  .0000   .3222  .5555  .3463

Indirect effect(s) of X on Y:
         Effect  BootSE  BootLLCI  BootULCI
ATB      .3472   .0481    .2561     .4446

Completely standardized indirect effect(s) of X on Y:
         Effect  BootSE  BootLLCI  BootULCI
ATB      .2740   .0368    .2037     .3484
```

Based on the statistical evidence, it was identified that there is a significant and positive relationship between celebrity credibility and attitude towards the brand which rejects the first null hypothesis of the study and accepts the alternative hypothesis. These research findings are consistent with the findings of the previous research which states that choosing a celebrity to represent a brand should be credible since credibility is crucial in elevating the attitudes about the brand (Choi & Rifon, 2012; Lafferty & Goldsmith, 1999; Lafferty et al., 2002; Wang et al., 2017). The study of Choi and Rifon (2012), suggested a positive effect of celebrity congruence on the attitude towards

the brand, but the impact size is 0.086 which is relatively smaller when compared with the findings of the current study. The findings of Wang et al. (2017) also show a strong positive relationship between celebrity credibility and attitude towards the brand with a β value of 0.640 which is relatively similar to the β value of the current study.

However, these findings contradict the arguments presented by Kamins (1990) and Till and Shimp (1998). Those studies indicate that the credibility of the celebrity has no significant impact on consumers' attitudes toward the brand. And they further stated that the effectiveness of the endorsement depends on the behavior of the endorser and also based on the type of product endorsed. The more positive the consumer's perception of the celebrity, the more the attitude of the customers toward the brand will be, and vice versa (Vidyanata et al., 2018).

5.2 Relationship between Attitude Towards Brand (ATB) and Purchase Intention (PI)

The results generated through the correlation analysis and multiple regression supported the second alternative hypothesis of the study and revealed that there is a significant and positive relationship between the two variables. These research findings are consistent with the majority of the previous research findings which demonstrate that people who have a positive attitude towards the brand are more inclined to purchase the products (Ha & Lam, 2017; Muda et al., 2014; Paul & Bhakar, 2017; Sallam & Wahid, 2012; Singh & Banerjee, 2018). Based on the statistics of the study of Muda

et al. (2014) and Ha and Lam (2017), a moderate positive relationship between the two variables were identified as the β values were 0.62 and 0.696 respectively. However, the study done by Singh and Banerjee (2018), identified similar statistical evidence to the current study. It also identified a weak positive relationship between the two variables with a β value of 0.387. The outcome of the current study also validates the argument of the Theory of Reasoned Actions which states that a consumer's purchase intention is positively influenced by attitude (Ajzen & Fishbein, 2002). However, in the study of Lafferty and Goldsmith (1999), it was found that there is no significant relationship between attitude towards the brand and purchase intention. Lafferty and Goldsmith (1999) made the argument that consumers might not buy things just because they have a positive opinion about the celebrity-endorsed brand. And further, they revealed that these contrasting findings do not show a straightforward relationship between the two variables mainly due to the influence of additional factors like product involvement and situational factors. Overall, the information from the current study generally supports the findings of the majority of studies and indicates that attitudes toward the brand are significantly correlated with purchase intentions.

5.3 Relationship between Celebrity Credibility and Purchase Intention

The third hypothesis of the study proposes the relationship between celebrity credibility and purchase intention. With the statistical evidence generated for the hypothesis through the correlation and multiple

regression analysis, it was identified that there is a significant positive relationship between the two variables. However, with the presence of a mediator (attitude towards the brand), the relationship between the independent variable (celebrity credibility) and the dependent variable (purchase intention) could be changed because the mediator represents a causal connection between the independent and the dependent variables (Baron & Kenny, 1986). In the absence of a mediator, the direct relationship between the independent and the dependent variables might change. Therefore, as a mediator is present in the study, the author evaluated the relationship between celebrity credibility and purchase intention with the presence of the mediator of attitude towards the brand. And it was identified that when customers perceive celebrities as credible, they are more likely to have higher purchase intention.

The findings of the current study are consistent with the findings of previous studies (Baig & Siddiqui, 2012; Choi & Rifon, 2002; Erdogan, 1999; Kumar & Tripathi, 2019; Lafferty et al., 2002; McCracken, 1989; Till & Busler, 2000). Those findings showed that when consumers perceive the celebrities endorsed as credible, it will increase the intention of the consumers to buy the product. In the study of Baig and Siddiqui (2012), the β value of the relationship between celebrity credibility and purchase intention was 0.012 which showed a positive and significant relationship between the two variables even though the β value was lower than the current study. However, the study of Kumar and Tripathi (2019) showed a β value of

0.359 which is quite similar to the current study.

But several studies have not identified any significant relationship between the two variables and show a contradiction with the current findings (Gupta et al., 2015; Jamil & Hassan, 2014; Vidyanata et al., 2018). Lafferty and Goldsmith (1999) identified that the reason why the relationship between celebrity credibility and purchase intention is not significant is mainly that the customers are more concerned about product-specific attributes like quality and material rather than the credibility of the endorser. And the study of Vidyanata et al. (2018), the relationship was not significant as the p-value was 0.061 which was higher than the acceptable range of the p-value.

The author also identified a positive and significant relationship between celebrity credibility and purchase intention when there is no mediator involved (p = 0.000<0.05, β = 0.620). This finding is also consistent with the findings of the Sri Lankan study of Nirushan and Saranya (2017) which studied about the relationship between celebrity endorsement and purchase intention of malted milk powder with special reference to the Trincomalee district. In his study, the author found that the standardized β value is 0.752 which shows a quite similar β value to the current study. Therefore, it proves that the current findings of the research are still valid and suggest that the relationship between celebrity endorsement and purchase intention is consistent across different geographical locations in Sri Lanka.

5.4 Attitude Towards Brand mediates the relationship between Celebrity Credibility and Purchase Intention

The fourth hypothesis of the study proposes the impact of the mediator which is the attitude towards the brand on the relationship between celebrity credibility and purchase intention. Based on the statistical evidence gained through the PROCESS Macro analysis, the author found that attitude towards the brand mediates the relationship between celebrity credibility and purchase intention. Furthermore, the findings of this study demonstrate a partial mediation effect as the indirect effect of celebrity credibility on purchase intention through attitude towards the brand and the direct effect of celebrity credibility on purchase intention after controlling the mediator of attitude towards the brand are significant. This means that when customers perceive celebrities as credible, they will turn to make a positive attitude towards the brand and then to increase their purchase intention. Also, some customers might perceive the celebrities as credible sources and they might not require a positive attitude towards the brand to increase their purchase intention Although a significant and positive relationship was identified between celebrity credibility and purchase intention with the presence of the mediator, it is identified that the mediator has weakened the direct relationship between CC and PI. This indicates that although celebrity credibility still has a positive impact on purchase intention, its strength dropped when the mediator was taken into account.

However, this statistical evidence is consistent with the findings of the previous research (Chin et al., 2019; Khattak et al., 2016; Till & Busler, 2000; Vidyanata et al., 2018). In the study of Chin et al (2019), a β value of 0.060 was identified in the indirect relationship between celebrity credibility and purchase intention with the presence of attitude towards the brand. While the study of Vidyanata et al. (2018) which focused mainly on apparel products found that attitude towards the brand fully mediates the relationship between celebrity endorsement and purchase intention which implies that a celebrity endorsement strategy won't be able to inspire the customers to purchase if they don't have a favorable attitude about the brand.

6. IMPLICATIONS OF THE STUDY

6.1 Theoretical and Academic Implication

This study provides important theoretical implications to the literature on celebrity endorsement. It advances our knowledge of the complex connection between celebrity credibility and purchase intention by demonstrating the mediation role of attitude towards the brand.

It also provides a better understanding of the factors which are affecting the efficacy of the celebrity in the Sri Lankan context while helping to expand the literature available on the area which highlights the importance of celebrity credibility and attitude towards the brand. It also fills the empirical gap identified by the author which states that there is no research done in the Sri Lankan context with the mediator of attitude towards the brand when determining the relationship

between celebrity credibility and purchase intention.

6.2 Managerial Implications

The findings of the study provide valuable insights for brand managers and marketers in creating more effective celebrity endorsement-related decisions in the Sri Lankan context. The findings highlight that when selecting the most appropriate celebrity endorser for the brand, it should not only be attractive but should also be trustworthy and have expertise in that field. Furthermore, it highlights that in order to maximize the impact of celebrity endorsement, marketers should understand the mediating role of attitude toward the brand. The findings reflected that the positive attitude of the customers towards the brand can be made by endorsing credible celebrities with the brands. But it should be carefully monitored as the findings have further depicted that it has decreased the strength of the relationship between celebrity credibility and purchase intention. Although credible celebrity endorsement still shows a positive impact on purchase intention, the effect may not be strong as it would be without the mediator. So, therefore the managers should take necessary actions to lead the customers directly from the credibility of the celebrities to the purchase intention in order to get the maximum out of the endorsement. But if the managers are using the route with attitude towards the brand, then they should endorse highly credible celebrities in order to reduce the reduction of the strength by the mediator of attitude towards the brand on the purchase intention.

6.3 Societal Implications

The findings of the study provide important implications for society, mainly considering the context of promoting sustainable development through responsible consumption and production. Marketers may support the promotion of responsible production and consumption by utilizing credible celebrities with the brand and persuading the customers to purchase the products which are having the least negative impact on the environment, aligning with the values and expectations of the Sri Lankan customers. Furthermore, credible celebrity endorsement with brand creates a positive social networking.

7. LIMITATIONS AND FUTURE RESEARCH AREA

The first limitation of this study was that the survey was conducted only with the respondents of Western Province. Although one-fourth of the total population of Sri Lanka is living in Western Province, the perception regarding celebrity endorsement and purchase intention of customers would be different from other provinces of Sri Lanka. The second limitation of this study is that this study is only focused on the malted milk industry. The malted milk industry is just one industry where celebrity endorsements are being used. Also, the time period available for this study is very limited, therefore the author of this study had to fix with one province and one industry.

Future research could conduct the study in another province or other industries in order to assess the role of regional differences. They could also provide valuable insights for marketers who are willing to promote

brands in different regions in Sri Lanka by identifying different cultural and socio-economic factors that influence the effectiveness of celebrity endorsements. Future research could also investigate the same research topic by using a qualitative or mixed methodology. Although it consumes more time, it would bring more valuable insights for the managers when making decisions.

As a key finding of the study, it was identified that the mediator of attitude towards the brand has reduced the strength of the direct relationship between celebrity credibility and purchase intention which highlights the significance of understanding the role of the mediator in shaping the attitude of the consumers about the brand and behavior in response to celebrity endorsement. Therefore, future research could focus on determining the underlying mechanisms through which attitude towards the brand serves as the mediator and explore the factors that influence reducing the strength of the relationship.

8. CONCLUSION

In conclusion, this study has investigated on the complex relationship between celebrity credibility and purchase intention through the mediating role of attitude towards the brand of the malted milk consumers of the Western Province of Sri Lanka. The findings of the study supported all the hypotheses in the study indicating that the relationships between celebrity credibility and attitude towards the brand (H1), attitude towards the brand and purchase intention (H2), and celebrity credibility and purchase intention (H3) are statistically significant and positive.

Additionally, it was found that the mediating role of attitude towards the brand has a significant impact on the relationship between celebrity credibility and purchase intention (H4). Although the indirect relationship between celebrity credibility and purchase intention in the presence of the mediator has shown a significant and positive relationship, the effect has been reduced in the direct relationship when the mediator was involved in the study. Where it was identified as a key finding and a major area where future research should investigate on.

With the findings of the study, the author was able to provide implications for the managers mainly in the malted milk industry in Sri Lanka as to how they should utilize credible celebrities in order to create higher purchase intention with the presence or the absence of the mediator. Also, the study has provided valuable societal, academic, and theoretical implications while highlighting the key findings and limitations of the study. The author has suggested a few areas where future research should give more focus based on the limitations of the study along with a strong future research recommendation based on the key findings of the study where further research is needed. Overall, through the findings of the study, the author has successfully addressed the research problem, questions, gaps, objectives, and hypothesis and has provided valuable insight for future research and practical applications.

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Exploring the Relationship Between Green Marketing Mix and Customers' Green Purchasing Intentions: A Study of the Sri Lankan Hotel Industry

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ABSTRACT

This study explores the effect of the green marketing mix on customers' green purchasing intentions within the Sri Lankan hotel industry. It addresses the research question: What is the effect of the green marketing mix on customers' green purchasing intention? Using a quantitative research design, data was collected from 200 hotel customers in Sri Lanka through a self-administered questionnaire. The questionnaire measured four key elements of the green marketing mix: green product, green price, green place, and green promotion, alongside customers' green purchasing intentions.

Regression analysis was employed to assess the relationship between these variables. The findings reveal that all four elements of the green marketing mix have a significant and positive effect on green purchasing intentions. These results suggest that hotels in Sri Lanka can effectively influence customer behavior by leveraging green marketing strategies. Specifically, hotels should focus on developing and offering eco-friendly products, adopting competitive pricing strategies for green services, creating a welcoming and sustainable environment, and promoting their green initiatives through various marketing channels.

This study provides practical recommendations for hotel managers in Sri Lanka to enhance their green marketing efforts, thereby contributing to the promotion of sustainable tourism. Additionally, the findings contribute to the theoretical understanding of green marketing's role in shaping consumer behavior, particularly in the context of a developing country. By adopting these strategies, the Sri Lankan hotel industry can not only attract environmentally conscious customers but also support the broader goals of sustainable development.

Keywords - Green Marketing Mix, Green Purchasing Intention, Sustainable Tourism

1. INTRODUCTION

The global hotel industry significantly impacts the world economy, contributing approximately 10% to global GDP and generating over 300 million jobs (World Tourism Organization, 2023). However, it also faces environmental challenges, accounting for about 5% of global energy consumption and 10% of global water usage (UNEP, 2020).

Recent years have seen increasing awareness of the environmental impact of the hotel industry, with growing demand for sustainable tourism practices (Gössling et al., 2012). Surveys indicate that many travellers are willing to pay a premium for eco-friendly accommodations.

In response, numerous hotels are adopting green marketing strategies. Green marketing involves developing and promoting products and services that address consumers' environmental concerns (Meyer, 2001). These strategies often include offering eco-friendly products and services, using sustainable packaging and marketing materials, and emphasizing the hotel's commitment to environmental sustainability.

Despite the rise in green marketing within the hotel sector, there remains a lack of research on how the green marketing mix influences consumers' intentions to make environmentally responsible purchases. The green marketing mix consists of four key elements: Green Product: Products and services designed to minimize environmental impact, such as energy-efficient appliances, organic food options, and recycled materials (Karunarathna et al.,

2020); Green Price: Competitive pricing for eco-friendly products and services, including the potential for premium pricing if consumers are willing to pay more for environmentally responsible options (Hussain & Ali, 2015).

Green Place: The accessibility and distribution of eco-friendly products and services. Hotels can enhance consumer access to green offerings by making them readily available in convenient locations (Karunarathna et al., 2020); Green Promotion: The communication and marketing of eco-friendly products and services. This involves informing consumers about the benefits of these offerings and encouraging their adoption (Pushpanathan, 2020).

1.1 Problem statement

The current research on how the green marketing mix influences consumers' environmentally conscious purchasing decisions within the Sri Lankan hotel industry is limited. This study aims to address this gap by evaluating the effects of green product strategies, eco-friendly pricing, sustainable marketing practices, and responsible distribution methods on consumers' willingness to engage in green purchasing behaviour. The research will focus on the top ten hotels in Colombo, Sri Lanka.

1.2 Research Questions

- What is the relationship between the green marketing mix and consumers' green purchasing intentions?

1.3 Research Objectives

- To investigate the relationship between the green marketing mix and consumers' green purchasing intentions.

1.4 Significance of the Study

This research is significant as it aims to provide valuable insights into how hotels in Sri Lanka can effectively utilize the green marketing mix to influence and enhance consumers' inclination towards environmentally conscious purchasing decisions. The findings will be of practical relevance to both scholars and industry professionals, offering a deeper understanding of how green marketing strategies can be applied in the Sri Lankan hotel sector to promote sustainable consumer behaviour.

1.5 Scope of the Study

This study will specifically examine the top 10 hotels in Colombo, Sri Lanka's capital and largest city, to assess how the green marketing mix influences consumers' inclination towards environmentally responsible purchasing decisions. The scope is intentionally limited to these hotels and does not include other factors such as demographics, psychographics, or previous consumer experiences. This focus is intended to provide a clear and specific understanding of the green marketing mix's impact without the added complexity of these other variables.

2. LITERATURE REVIEW

2.1 Green Consumerism and Ethical Consumerism

The concepts of green consumerism and ethical consumerism have gained significant traction as consumers become increasingly aware of environmental and ethical issues. Uusitalo & Oksanen (2004) define green consumerism as the practice of making purchasing decisions aligned with societal values and objectives. This form of consumption emphasizes the need for consumers to consider the ecological impact of their choices. Crane (2000) argues that addressing ethical concerns can be enhanced through effective communication, which can increase consumer awareness and encourage more sustainable purchasing behaviors. Peattie & Crane (2005) propose that green marketing serves as a strategic tool for satisfying consumer demands while promoting sustainability and social responsibility.

Tan & Lau (2010) assert that businesses committed to environmental responsibility should offer sustainable products and services to gain the trust and approval of consumers. This perspective reflects a growing recognition among companies that integrating environmental considerations into their operations can enhance brand loyalty and market competitiveness.

As consumer consciousness around environmental issues grows, the demand for eco-friendly products has increased. Akehurst et al. (2012) observe that consumers are increasingly inclined to choose environmentally sustainable products over conventional options. This shift in consumer behavior is particularly evident among those who prioritize

ecological considerations when making purchasing decisions (Gür et al., 2016). Health-conscious consumers often seek to avoid products that may harm their well-being or the environment, such as items with high energy consumption or hazardous ingredients.

Karunarathna et al. (2020) highlight the increasing prevalence of eco-conscious consumers who prioritize socially responsible brands. For these consumers, each purchase represents a reflection of their values regarding community welfare, ethics, and resource conservation. The work of Dagher & Itani (2014) and Ansar (2013) indicates that consumers are becoming more aware of their environmental impact and are actively seeking out companies that engage in sustainable practices. This evolving landscape underscores the need for businesses to adapt their marketing strategies to appeal to this environmentally conscious consumer base.

2.2 Consumer Behaviour and Green Marketing

The shift toward green consumerism has significant implications for consumer behavior and marketing strategies. As environmental concerns become more pressing, consumers are increasingly motivated to align their purchasing habits with their values. Research by Akehurst et al. (2012) demonstrates that a growing number of consumers are willing to pay a premium for eco-friendly products, reflecting their commitment to sustainability. This trend is particularly relevant in industries such as hospitality, where consumers are more inclined to choose establishments that prioritize environmental practices.

The growing awareness of climate change and its effects has prompted consumers to reconsider their purchasing decisions. According to Dagher & Itani (2014), consumers are becoming more conscious of the ecological implications of their choices and actively seek brands that demonstrate a commitment to environmental responsibility. The increasing demand for sustainable products has prompted companies to innovate and develop green marketing strategies that resonate with eco-conscious consumers.

The connection between consumer behavior and green marketing is further explored by Tan & Lau (2010), who argue that businesses must align their product offerings with the expectations of environmentally aware consumers. This alignment necessitates a shift in marketing strategies, where companies emphasize the environmental benefits of their products and the ethical values underpinning their brand. For instance, eco-friendly packaging, transparent sourcing practices, and clear communication about a product's environmental impact have become critical elements of effective green marketing.

Moreover, Karunarathna et al. (2020) highlight the importance of building trust with consumers through authentic green marketing efforts. Consumers are increasingly skeptical of marketing claims, making it essential for companies to provide verifiable evidence of their environmental practices. Green marketing initiatives must be grounded in transparency and

authenticity to effectively engage eco-conscious consumers.

2.3 Green Marketing and the Sri Lankan Hotel Industry

In the context of the Sri Lankan hotel industry, the rise of green marketing emphasizes the importance of environmental conservation while fulfilling consumer needs. As one of the key sectors of the economy, the hospitality industry in Sri Lanka faces significant challenges related to sustainability. Eco-friendly hotels, often referred to as "green hotels," are emerging to address these challenges by implementing sustainable practices and reducing their environmental footprint.

The concept of green hotels encompasses a range of practices, including energy efficiency, waste reduction, and responsible sourcing. According to Karunarathna et al. (2020), the implementation of sustainable practices not only benefits the environment but also enhances the reputation of hotels in the eyes of consumers. By adopting eco-friendly measures, hotels can attract environmentally conscious guests and differentiate themselves in a competitive market.

Despite the advantages associated with eco-hotels, the transition to sustainable practices is not without its challenges. The initial costs of implementing green technologies and practices can be significant, posing a barrier for some establishments. However, the long-term benefits of energy savings and enhanced guest loyalty often outweigh these initial investments.

Moreover, the potential for sustainable tourism in Sri Lanka is promising. As consumers increasingly prioritize sustainability in their travel choices, hotels that adopt eco-friendly practices can gain a competitive edge. The integration of sustainable initiatives not only appeals to eco-conscious travelers but also contributes to the overall conservation of Sri Lanka's natural resources.

2.4 Green Marketing Mix

The green marketing mix refers to the integration of environmental considerations into traditional marketing strategies. It comprises four key elements: product, price, place, and promotion. Dangelico & Pujari (2010) define "green buying behavior" as the activities and choices consumers make to protect the environment through responsible resource management, waste reduction, and pollution avoidance. This approach emphasizes the need for companies to develop products that minimize their ecological impact throughout their life cycle.

2.4.1 Green Product

Green products are defined as those designed with environmental considerations in mind. Tseng & Hung (2013) highlight that such products typically have a low environmental impact and are often recyclable or made from sustainable materials. Kumar & Ghodeswar (2015) further characterize green products as those produced using environmentally friendly methods and substances. Ecological development focuses on reducing energy consumption and emissions while extending

the life cycle of resources (Ottman et al., 2006).

Mishra et al. (2019) introduce the concept of the five Rs—recycling, reuse, repair, reconditioning, and remanufacturing—as principles for enhancing product sustainability. These principles serve as a guideline for companies aiming to reduce their environmental footprint and align their offerings with consumer expectations for eco-friendly products.

The advantages of green products extend beyond environmental benefits. For instance, organic foods can reduce reliance on artificial pesticides, energy-efficient appliances lower both energy bills and greenhouse gas emissions, and recycled paper products contribute to forest conservation (Smith & Jones, 2020). However, the higher production costs associated with green products and limited consumer awareness present challenges for widespread adoption (Johnson et al., 2021). Successful examples of green products, such as Tesla electric vehicles and Energy Star appliances, demonstrate the importance of clearly communicating the benefits, effective marketing strategies, and consumer education.

2.4.2 Green Price

Price is a crucial aspect of the marketing mix, representing the total amount consumers are willing to pay for a product. In the context of green marketing, Abdullah et al. (2019) note that consumers are often willing to pay a premium for products perceived to offer added value. This additional value may include improved functionality, design, or overall performance. Although environmental benefits are often seen as supplementary, they can significantly distinguish products of comparable quality (Lanvin, 2014).

Green pricing is defined by Hashem and Al-Rifai (2011) as a price set in accordance with a company's adherence to environmental policies, whether mandated by law or internally established. Generally, green products tend to have a higher price point compared to conventional alternatives due to the costs associated with eco-friendly materials and production processes. Projections by Madhunimasha (2021) indicate that consumers are only willing to pay a premium for green products if they perceive a tangible increase in value.

This balance between maintaining profitability and ensuring sustainable practices is critical. While the higher costs of green products can deter some consumers, a growing number are recognizing the long-term benefits of sustainable choices. Strategies such as highlighting long-term cost savings, offering discounts, and creating incentives can help mitigate the perceived burden of higher prices. For example, energy-efficient appliances may lead to lower energy bills over time, while rebates on organic food can enhance affordability. Retailers can also employ loyalty programs and collaborate with local businesses to reduce costs associated with green products (Green & Brown, 2018).

Despite the challenges, businesses can implement effective strategies to make green products more accessible while preserving their environmental benefits. These strategies include educating consumers about the advantages of sustainable choices

and providing clear information about potential savings.

2.4.3 Green Place

"Green place" focuses on the logistics of product distribution to minimize transportation emissions, and the carbon footprint associated with it. Mahmoud (2018) emphasizes that green location management involves optimizing logistics to reduce environmental impact and ensuring that distribution channels are environmentally responsible (Hashem & Al-Rifai, 2011). This concept applies to both physical retail locations and online platforms, where goods should be distributed in a manner that is transparent, efficient, and environmentally friendly.

Improving accessibility to sustainable products is crucial for businesses aiming to align with sustainability principles and meet eco-conscious consumer demands. Strategic placement of retail stores in easily accessible locations and offering online sales can reduce travel-related emissions. Employing environmentally responsible packaging, such as recycled materials, further aligns with sustainability goals (Smith & Green, 2019).

However, transitioning to green distribution practices presents challenges, including the initial financial burden of adopting eco-friendly transportation options and sustainable packaging materials. Infrastructure limitations, such as the availability of electric vehicles and recycling facilities, also pose obstacles. Moreover, consumer awareness of the benefits of green distribution remains a critical factor in its success (Brown & Johnson, 2020).

Despite these challenges, several companies have successfully implemented green distribution strategies. For example, Amazon uses electric vehicles and recycled packaging, Walmart has shifted to 100% recycled paper for its private label products, and UPS maintains a fleet of electric vehicles. These companies demonstrate how investment in sustainable practices can reduce emissions and support environmental goals (Johnson et al., 2021).

Success in green distribution relies on several factors: investing in innovative technologies, forming collaborative partnerships with suppliers, and educating consumers about the environmental benefits of green practices. By focusing on these areas, businesses can enhance the accessibility and sustainability of their products while meeting both environmental and market demands (Green & Smith, 2018).

2.4.4 Green Promotions

Green promotion involves providing customers with accurate information about environmentally friendly products and practices without compromising their ethical or material interests (Hashem & Al-Rifai, 2011). Green advertising, a key marketing strategy, appeals to consumers who are concerned about the environment and seek products that align with their values (Singh, 2013). Toor and Dhir (2011) highlight that green marketing aims to influence consumer behaviour by promoting eco-friendly products and emphasizing the positive environmental impacts of their purchasing decisions.

Effective green promotion strategies are essential for businesses to convey the

environmental benefits of their offerings. This involves a range of approaches, including multi-platform advertising, public relations efforts for positive media coverage, social media engagement, point-of-sale promotions, and strategic partnerships with other organizations to enhance the message of green products (Smith & Johnson, 2019). These diverse methods enable businesses to reach various consumer segments and showcase their commitment to sustainability.

However, green promotion faces several challenges. One significant issue is greenwashing, where companies make misleading or unsubstantiated environmental claims, potentially undermining consumer trust. Addressing scepticism requires transparency and substantiated evidence to support green claims. Additionally, the financial cost of green promotion can be substantial, necessitating careful budgeting and strategy (Brown & Green, 2018).

Examples of effective green promotion include:

Patagonia: This clothing company, dedicated to sustainability, educates consumers about the environmental impact of the fashion industry and promotes initiatives like "Worn Wear" to encourage repairing and reusing clothing.

Seventh Generation: This household products company promotes its plant-based, non-toxic items by informing consumers about their health and environmental benefits. Their "Free & Clear" product line, free from harsh chemicals, is marketed

through educational materials (Green Marketing Association, 2020).

Successful green promotion relies on several key factors: transparency in providing credible evidence of environmental benefits, authenticity in demonstrating a genuine commitment to sustainability, and creativity in delivering engaging and impactful messaging. When executed effectively, these strategies can overcome the challenges of green promotion, fostering consumer trust and promoting responsible consumption (Smith & Johnson, 2019).

2.4.5 Purchase Intention

To assess how green marketing impacts consumer purchase intentions, a model considering socio-demographic variables, pricing, environmental advertising, and ecological packaging was developed (Ansar, 2013). This model, referred to as a framework, indicates that a person's willingness to make environmentally conscious purchases is significantly and positively correlated with their readiness to pay more for eco-friendly products (Mahmoud, 2018). Hasan and Ali (2015) found that consumers with strong environmental intentions are more likely to choose green products compared to those without such intentions. Additionally, a green product's competitive pricing and high quality positively influence a customer's gross profit margin (GBP) when the customer has a favourable intention towards the product and perceives its environmental benefits.

De Los Rios and Charnley (2017) discussed at the Oxford Business and Economic Conference the relationship between

marketing mix elements—product, packaging, pricing, place, and promotion—and how each influences the purchase decision. Mahmoud et al. (2017) describe "consumer behaviour" as the activities consumers engage in while seeking, acquiring, using, evaluating, and possibly rejecting products and services that meet their needs. These behaviours have both direct and indirect environmental impacts. Influencing consumer purchase intentions is crucial for marketing and sustainability, with several key factors influencing decisions.

Product attributes, including quality, value for money, and the ability to meet specific needs, significantly affect purchasing decisions. Brand trust and respect, price competitiveness, and effective marketing and promotion are also pivotal. Personal demographics such as age, income, and education further influence consumer preferences and intentions (Smith & Johnson, 2019).

Green marketing is an effective tool for shaping purchase intentions by emphasizing environmental benefits and aligning with consumer values for sustainability. Strategies include promoting green products through compelling messaging and imagery, offering incentives like discounts and coupons, and partnering with environmental organizations to bolster credibility (Brown & Green, 2018).

However, businesses face challenges in influencing purchase intentions. Consumer scepticism regarding green claims requires transparency and evidence-based support. The higher cost of green products may deter price-sensitive consumers, and with the growing number of businesses offering green alternatives, differentiation becomes crucial (Johnson et al., 2021).

For effective green marketing, businesses should prioritize transparency and honesty in their green claims to build consumer trust and avoid greenwashing. Consumer education is essential for raising awareness of the environmental benefits of products and services, thereby influencing purchase decisions. Incentives like discounts, coupons, and loyalty programs can encourage green choices. Collaborations with environmental organizations enhance credibility, and ensuring accessibility of green products, both online and in physical stores, is crucial for reaching a wider audience (Smith & Johnson, 2019).

In summary, influencing purchase intentions through green marketing involves a multifaceted approach that includes product attributes, brand trust, pricing, and promotional efforts. While challenges exist, transparency, authenticity, consumer education, incentives, and strategic collaborations can effectively shape purchase intentions and promote sustainable consumer behaviour.

2.5 Green Hotels

Green hotels exemplify eco-conscious lodging by implementing sustainable practices to reduce their environmental impact. These eco-friendly establishments are often identified through certifications such as Green Globe and LEED, which serve as indicators for environmentally aware consumers. Their commitment to sustainability includes actions like adopting energy-efficient appliances, recycling waste, sourcing local food, and integrating

renewable energy systems (Almuhrzi & Al-Azri, 2019).

2.5.1 Green Hotel Certifications

Several certifications recognize green hotels for their environmental efforts, each offering unique benefits (Nelson et al., 2021):

Green Globe: This globally recognized certification evaluates a hotel's sustainability across various criteria, including resource management and community engagement. Benefits of Green Globe certification include enhanced marketability, access to a network of sustainable partners, and increased credibility among eco-conscious travellers.

LEED (Leadership in Energy and Environmental Design): Although not exclusive to hotels, LEED certification focuses on sustainable construction and operational practices. LEED-certified hotels are recognized for their adherence to green building standards, energy efficiency, and resource conservation, which appeals to environmentally aware guests.

EarthCheck: EarthCheck assesses both the environmental and social performance of hotels. Certification provides access to a global network of sustainable travel experts and supports continuous improvement in sustainability practices. EarthCheck-certified hotels are noted for their commitment to reducing their carbon footprint.

By adhering to these certifications, green hotels demonstrate their dedication to environmental stewardship, enhancing their appeal to eco-conscious consumers and contributing to broader sustainability goals.

3. METHODOLOGY

This research will adopt a quantitative descriptive approach to investigate the relationship between the elements of the green marketing mix and consumers' purchase intentions in the Sri Lankan hotel industry. Quantitative descriptive research focuses on collecting numerical data to illustrate the characteristics of a specific population or sample. In this context, the target population includes all hotel patrons in Sri Lanka, while the sample will consist of a convenience group of willing hotel guests who participate in the survey (Creswell & Creswell, 2017).

The primary method of data collection will involve a self-administered online survey, which will be disseminated via a shared link and QR code on social media platforms and hotel websites. This survey will evaluate various factors, including green product, green price, green place, green promotion, and purchase intention.

Data analysis will be performed using SPSS statistical software. Correlation and regression analyses will be utilized to explore the relationships between the elements of the green marketing mix and purchase intention (Smith & Brown, 2018; Lee & Chen, 2020). This research design is appropriate for the study's objectives as it facilitates the collection of quantitative data from a sample of hotel guests, providing valuable insights into the connection between the green marketing mix and purchase intention (Johnson & Green, 2019).

To enhance the validity of the study, careful attention will be given to the sample size and

selection process to reduce potential biases. Ethical considerations will also be addressed, ensuring informed consent, confidentiality, and data protection. The survey will feature clear and relevant questions aimed at accurately measuring the constructs of interest, and the use of SPSS for data analysis will be justified due to its effectiveness in meeting the statistical needs of the study.

3.2 Conceptual Diagram
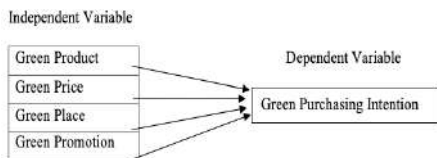
3.3 Hypotheses

H1: There is a relationship between green product strategies and customers' green purchasing intentions.

This hypothesis asserts that there is a significant positive relationship between the implementation of green product strategies and customers' intentions to purchase eco-friendly products. Effective green marketing practices, such as sustainable advertising and innovative communication techniques, play a crucial role in shaping consumer behavior (Larashati et al., 2012). Various promotional tools are at the disposal of green marketers, including advertisements, marketing collateral, social media, public relations efforts, and educational materials. These tools help convey essential information about the environmental impacts of products, ultimately fostering trust among consumers (Hossain & Khan, 2018b).

Green marketing aims to influence consumer behavior in favor of eco-friendly purchases (Mahmoud, 2018b). This hypothesis posits that customers are more inclined to purchase from hotels that actively promote their green product strategies. This can include initiatives such as educational campaigns that inform consumers about the benefits of green products and services, offering promotions or discounts for eco-friendly purchases, and collaborating with environmental organizations to underscore their commitment to sustainability.

By adopting these strategies, hotels can enhance consumer awareness and understanding of their eco-friendly offerings, increasing demand for sustainable options. As consumer interest in supporting environmentally responsible businesses continues to grow, hotels that effectively communicate their sustainability efforts are better positioned to attract guests seeking green products. Moreover, these promotional strategies can create a competitive edge, distinguishing environmentally friendly hotels from their competitors. In addition to attracting new customers, effective green product strategies contribute to building customer loyalty, as consumers are more likely to return to businesses they perceive as genuinely committed to sustainable practices.

H2: There is a relationship between green price strategies and customers' green purchasing intentions.

The hypothesis regarding green price strategies posits that the pricing of eco-friendly products significantly influences consumers' purchasing intentions. "Green price" refers to the costs associated with

environmentally friendly products, which may sometimes exceed those of conventional alternatives. Nevertheless, a substantial segment of consumers is willing to pay a premium for products they perceive as valuable and beneficial to the environment (Hossain & Khan, 2018b). This willingness often reflects an understanding of the total cost of ownership, where eco-friendly products may involve higher upfront costs due to the sustainable practices involved in their production.

Green pricing is an integral component of the green marketing mix, encompassing both the costs incurred in producing eco-friendly goods and the perceived value these products offer to consumers. As highlighted by Hashem and Al-Rifai (2011b), green pricing strategies must also take into account the ethical and legal obligations companies face when implementing environmental policies. However, hotels must be cautious not to price themselves out of the market by passing excessive costs onto consumers.

The significance of competitive pricing in the context of green products cannot be overstated. If green products are priced too high, even environmentally conscious consumers may hesitate to make purchases (Soonthonsmai, 2007). Conversely, some consumers may perceive a price premium as indicative of superior quality and durability. Research by Boztepe (2016) suggests that price often serves as a proxy for value, indicating that effective green pricing strategies can enhance consumers' intentions to purchase eco-friendly products.

In the hotel industry, offering a diverse range of competitively priced green products—such as those made from recycled materials,

designed for energy or water efficiency, or free from harmful chemicals—can significantly impact purchasing intentions. Consumers are motivated not only by the eco-friendliness of these products but also by their desire to support businesses committed to sustainability. Hotels that strategically position their green products through effective pricing strategies can attract more environmentally conscious consumers, enhancing their overall market appeal.

H3: There is a relationship between green place strategies and customers' green purchasing intentions

This hypothesis focuses on the importance of green place strategies in influencing consumer purchasing behavior. Green place strategies refer to the practices and environments in which eco-friendly products are offered. Strategies such as clear labeling of green products, using sustainable materials, and providing recycling facilities can enhance the appeal of hotels to environmentally conscious consumers (Achola & Were, 2018).

Accessibility is a critical factor in consumer decision-making. Consumers often weigh the convenience of purchasing green products locally against the need to travel further for similar items. Thus, the location and presentation of a hotel offering green products significantly influence purchasing choices. Businesses seeking to enhance sales must ensure that eco-friendly options are easily accessible and prominently displayed within their establishments.

Moreover, research has shown that consumers tend to prefer shopping in low-

pollution areas, emphasizing the importance of environmental consciousness in retail strategies. Hotels that embrace green place strategies can not only attract environmentally aware guests but also contribute to their own long-term viability and cost competitiveness by implementing sustainable practices across their operations (Kanake, 2022).

This hypothesis posits that consumers are more likely to choose hotels that have integrated green place strategies into their operations. Examples of such strategies include the use of energy-efficient and water-saving appliances, the incorporation of recycled materials in construction and renovations, and the promotion of eco-friendly transportation options, such as public transit and bike-sharing programs. Consumers are motivated to select green products from these hotels because they perceive them as genuinely committed to sustainability, which enhances their satisfaction in supporting environmentally responsible businesses.

As the demand for sustainable accommodations continues to rise, hotels implementing effective green place strategies are better positioned to attract environmentally conscious guests. These strategies not only contribute to cost savings through reduced energy and water expenses but also enhance the hotel's overall reputation and image, leading to positive media attention and a broader customer base.

H4: There is a relationship between green promotion strategies and customers' green purchasing intentions.

The Theory of Planned Behavior (TPB), proposed by Ajzen (1991), is a widely recognized framework for understanding sustainable consumption behaviors. It allows researchers to explore the factors driving consumer intentions, particularly in the context of purchasing green products. TPB identifies three key components: attitudes towards behavior, subjective norms, and perceived behavioral control. These elements collectively shape the intention to engage in specific actions, such as buying eco-friendly products.

In the realm of green marketing, the intention to purchase refers to a customer's likelihood of selecting eco-friendly products or services in the future (Arslan & Zaman, 2014). As Ramayah et al. (2010) highlight, consumers' intentions are critical cognitive variables influencing their eco-friendly purchasing decisions. Purchasing green products exemplifies a moral decision-making process, representing a form of socially responsible consumption (Joshi & Rahman, 2015).

Factors such as perceived behavioral concerns, environmental awareness, and green trust significantly impact customers' intentions to purchase green products (Maichum et al., 2016). Therefore, a strong intention to buy correlates positively with the likelihood of actual purchases. The intention to purchase is often seen as a primary predictor of consumer behavior, as a robust purchase intention typically leads to a completed transaction (Wu et al., 2011).

The TPB framework can effectively illustrate the relationship between green marketing mix elements—specifically, green promotion strategies—and consumers'

green purchase intentions. For instance, effective green promotion strategies can significantly shape consumer attitudes by raising awareness of the environmental benefits of green products and highlighting their quality and performance. Furthermore, these strategies can influence subjective norms by demonstrating that purchasing eco-friendly products is a socially acceptable and encouraged behavior within consumer communities.

Finally, green promotion strategies can enhance perceived behavioral control by making eco-friendly products more accessible and prominently featured in marketing campaigns, thereby increasing consumers' confidence in their ability to make environmentally responsible purchasing decisions.

In conclusion, the Theory of Planned Behavior underscores the substantial impact of green promotion strategies on consumers' attitudes, subjective norms, and perceived behavioral control, all of which contribute to shaping green purchasing intentions. This relationship emphasizes the critical role of effective green promotion strategies in guiding consumer behavior toward more sustainable choices. By implementing targeted green marketing initiatives, hotels can significantly influence customer purchasing intentions, further promoting eco-friendly practices within the hospitality industry.

3.4 Population and Study Sample

This research focuses on green-certified hotels in Sri Lanka, employing a purposive sampling method. The study includes only those hotels that possess certification from a recognized green certification body. The sample consists of the top 200 green hotels in Sri Lanka, as ranked by the Sri Lanka Sustainable Tourism Council. Ultimately, 218 participants were successfully engaged in the study.

To ensure the sample accurately represents the broader population, several methodological steps were implemented. First, the sample encompasses green hotels located in diverse geographical areas across Sri Lanka. Second, it includes hotels of varying sizes and types, providing a holistic view of the green hotel sector. Lastly, the sample incorporates establishments catering to a wide range of customer segments, enhancing its overall representativeness.

The research involved a total of 200 participants, with 20 individuals purposively selected from each of the 10 hotels included in the study. The sample size was calculated to achieve a 95% confidence level with a 5% margin of error. The focus was on the top ten hotels in the Colombo District, categorized by their star ratings.

Hotels were selected based on specific criteria related to their green marketing strategies. These criteria included the implementation of effective green marketing practices, such as waste management, utilization of renewable energy sources, and promotion of eco-tourism initiatives. A convenience sample of 200 participants was drawn, comprising guests who had recently stayed at the selected hotels and had interacted with their green marketing efforts.

Data collection was conducted through a structured questionnaire, and both

descriptive and inferential statistical methods were employed for data analysis.

3.5 Data Analysis

The survey data were analyzed using SPSS statistical software. Descriptive statistics provided insights into the sample's characteristics and various aspects of the green marketing mix. Correlation and regression analyses were conducted to investigate the relationships between elements of the green marketing mix and customer purchasing intentions.

The participant sample consisted of 200 individuals, with a slightly higher proportion of males (51.4%). The age distribution indicated that 28.4% of participants were between 20 and 25 years old. The sample was notably well-educated, with 56% holding higher education degrees. In terms of employment status, 39% of participants were employed, and the predominant monthly income bracket was Rs. 50,001 - Rs. 100,000, representing 26.6% of respondents. A significant majority (61.5%) were married. This demographic profile suggests that the participants are relatively young, highly educated, and possess moderate affluence, aligning with the higher costs often associated with green hotels.

The reliability of the scales used to measure the green marketing mix and green purchase intention was found to be generally acceptable. However, the Cronbach's alpha value for the Green Product Price (GPP) scale was recorded at 0.684, slightly below the recommended threshold of 0.70. This lower reliability may stem from the limited number of items or variability in how the items reflect the underlying concept (Tang,

2014). Despite this, the GPP scale can still be utilized, though caution is warranted in interpreting the results due to potential limitations. To improve the scale's reliability and validity, future studies could augment the GPP scale with additional items or perform factor analysis (Donati et al., 2019).

Descriptive statistics revealed that the mode for five key variables—green product (IVA), green price (IVB), green place (IVC), green promotion (IVD), and customer purchase intention (DV)—was consistently 2, indicating that "Agreed" was the most common response. The low standard deviations across these variables suggested that responses were closely aligned around the mode, reflecting a general consensus among participants.

Regression analysis indicated a positive and statistically significant influence of all four factors—green product (IVA), green price (IVB), green place (IVC), and green promotion (IVD)—on customer purchase intention (DV). The model explained 72.8% of the variance in customer purchase intention, indicating a strong fit and effectiveness in capturing the dynamics of the study. Significance tests confirmed the relevance of all four factors in predicting customer purchase intention, with green promotion (IVD) identified as the most influential driver.

3.6 Interpretation and Implications

The regression analysis highlighted that green promotion (IVD) had the most significant effect on customer purchase intention, followed by green price (IVB) and green place (IVC). Although the hypothesis regarding green product strategies (IVA)

received a positive coefficient, it was ultimately rejected, suggesting that its influence on purchase intention was modest (coefficient = 0.064). Despite being positive, this effect may lack statistical significance due to factors like sample size or the influence of other variables.

The rejection of this hypothesis may stem from several factors, including the potential mediation of IVA's impact by other elements, such as green price, green place, or green promotion. Additionally, challenges concerning the reliability or validity of the IVA measurement could have affected the outcomes. This highlights the need for further investigation to validate the hypothesis and address any potential limitations in the data (Baron & Kenny, 1986).

In summary, the analysis emphasizes the critical role of green promotion strategies in enhancing customer purchase intentions. Businesses are encouraged to effectively promote their green products, adopt competitive pricing strategies, and ensure product availability to attract environmentally conscious consumers. By focusing on these aspects, hotels can strengthen their market position and better cater to the growing demand for sustainable options.

4. CONCLUSION

This research examined the factors influencing consumers' intentions to purchase green products through a quantitative approach involving 213 participants. The analysis indicated that key elements, including environmental concern, product availability, pricing, and quality,

significantly affect consumers' willingness to choose eco-friendly options.

The results highlight the essential role of environmental concern as a primary driver of green purchasing behavior, which is consistent with earlier studies. Additionally, the availability, affordability, and quality of green products are crucial determinants that shape consumer decisions. These findings suggest that for green products to gain traction in the market, they must be easily accessible, reasonably priced, and of superior quality.

While this study makes important contributions, it also has limitations. These include potential social desirability bias in the self-reported data, unmeasured confounding factors like income and education level, and the study's focus on a single geographical area, which may restrict the applicability of the results to broader contexts.

To enhance the robustness of future research, it is recommended to replicate this study with larger and more diverse populations across different countries. Additionally, examining the effects of social norms, perceived risks, and developing effective strategies to promote green purchasing could offer deeper insights into consumer behavior in this area.

The implications of this study provide valuable direction for marketers and policymakers. Marketers can use these insights to formulate strategies that enhance the accessibility, affordability, and quality of green products, while also raising awareness about environmental concerns among consumers. Policymakers can design

incentives and policies that facilitate green purchasing, such as providing subsidies for eco-friendly products or tax benefits for businesses committed to sustainability.

In summary, this study sheds light on the critical factors influencing green purchase intentions and serves as a foundation for further research and practical efforts aimed at promoting environmentally responsible consumer behavior. By addressing the identified limitations and considering the recommendations for future studies, this work contributes to a more profound understanding of the motivations behind green purchasing, benefiting both academia and society as a whole.

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Gender Dynamics in the Sri Lankan Cinema: Unpacking the Underrepresentation of Women in Managerial Roles

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ABSTRACT

This study explores the underrepresentation of women in managerial roles within the Sri Lankan film industry, despite their qualifications. Through interviews with five females who possess strong professional and academic qualifications in film management, as well as five males currently working in managerial roles within the Sri Lankan film industry, thematic analysis reveals key challenges women face. Biological factors, such as physical demands and inadequate sanitation on film sets pose significant barriers, while issues like sexual harassment and gender stereotypes further discourage female participation. Sociocultural constraints, including traditional gender roles, family obligations and societal perceptions limit women's ability to fully engage in the industry. Male-dominated work environments perpetuate these biases, despite some recognition of the challenges women face. The study highlights the need for cultural and structural changes within the industry to create a more inclusive space, where women are empowered to take on managerial roles in filmmaking.

Keywords - **Sri Lankan cinema, Female filmmakers, Gender disparity, Female underrepresentation, Managerial roles**

1. INTRODUCTION

The film industry, often celebrated for its creativity and cultural influence, has historically been marked by gender inequalities worldwide. Women are significantly underrepresented in key professional roles that involve substantial creative and financial decision-making authority, such as directing and producing

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(Ehrich et al., 2022). Despite global advancements in gender equity, these disparities persist in the film industry, including Sri Lanka's, where female representation remains notably low (Bandaranayake, 2024). While women have made considerable strides in acting roles, their participation in key creative and decision-making positions such as directing and producing, remains disproportionately limited (Smith et al., 2018; Lauzen, 2020). This study aims to explore the underlying reasons for the underrepresentation of women in managerial positions within the Sri Lankan film industry and examine the challenges and barriers they face.

Globally, the underrepresentation of women in the film industry is well-documented. Women are often restricted to a narrow range of roles both on-screen and off-screen, with decision-making positions largely occupied by men (Lauzen, 2020). In particular, women have historically faced systemic barriers such as gender bias, stereotyping and unequal access to resources, which inhibit their participation and advancement in the industry (Eikhof & Warhurst, 2013). These issues are also prevalent in the South Asian context, where cultural and societal norms often dictate the roles women are expected to play, further complicating their inclusion in industries such as filmmaking (Ganti, 2012).

The situation in Sri Lanka mirrors many of these global trends. Sri Lanka's rich cinematic history has been a source of inspiration for many filmmakers, yet the cinematic narrative has been predominantly shaped by male directors, leaving the voices of female filmmakers underrepresented

(Bandaranayake, 2024). Although the country has a rich cinematic history, women remain largely underrepresented, especially in roles behind the camera.

The Sri Lankan cinema began with the screening of "Kadaunu Poronduwa" (The Broken Promise) in 1947 and currently accounts for 77 years of cinematic legacy (Lokuliyana, 2021). However, the entry of female filmmakers in Sri Lanka was recorded 32 years after the birth of the country's cinema, starting with Rukmani Devi's role as a producer in 1957 followed by Florida Jayalath in 1965 as the first female director (Bandaranayake, 2024). Henceforth, the presence of women in filmmaking has grown gradually, yet the industry remains largely male-dominated (Bandaranayake, 2024).

In this predominantly male environment, the growth of women in Sri Lankan cinema has been slow, and the industry continues to be dominated by male filmmakers. However, this underrepresentation is not due to a lack of qualified females. This stands in stark contrast to the increasing number of educated women entering the field, highlighting a disconnect between educational achievements and actual representation in key managerial positions. The statistics from the University of Kelaniya, the only state university offering a Bachelor's in Film & Television Studies in Sri Lanka, indicate a higher female representation in academic programmemes related to cinema. In 2022, 66.7% of the graduates were female, and they significantly outperformed their male counterparts in achieving academic honours. Over the period from 2015/16 to 2020/21,

the total enrollment data shows 229 females compared to 91 males in the Film & Television Studies programme, further illustrating the growing interest of women in film and television education (University of Kelaniya, 2020; 2022). Despite this strong female presence in higher education, these numbers are not translating into equal representation in managerial roles in the industry.

1.1 Problem Statement

Regardless of the increasing recognition of gender equality across industries and the elevated female representation in the higher education relevant to film and television, the Sri Lankan film industry continues to exhibit a significant gender gap, particularly in management roles. Women's voices remain underrepresented, and their contributions are often overlooked, resulting in a film industry that does not fully reflect the diversity of experiences in Sri Lankan society. The reasons for this low representation are multifaceted, involving social, cultural and institutional factors that create barriers to entry and advancement for women (Lauzen, 2020). Though the reasons for the persistence of inequality in the creative industries has been explored through various lenses, existing research often provides only partial explanations (Eikhof & Warhurst, 2013). Therefore, this study aims to explore the experiences of female filmmakers alongside the perspectives of their male counterparts, offering valuable insights to address the gender disparity in the Sri Lankan film industry.

1.2 Research Question

Why is there a low managerial representation of women in the Sri Lankan cinema industry, despite the significant number of qualified female professionals with a background in film management?

1.3 Research Objective

To explore the factors contributing to the low managerial representation of women in the Sri Lankan cinema industry, despite the significant number of qualified female professionals with a background in film management.

The importance of this study lies in its potential to shed light on the under representation of women in the Sri Lankan film industry. By understanding the barriers that prevent women from fully participating, this research contributes to ongoing discussions around gender equity in creative industries and suggests actionable strategies to promote greater female representation.

2. LITERATURE REVIEW

2.1 Women in Film

Prominent female figures in the entertainment industry must adeptly navigate a landscape that demands both creative talent and robust networking abilities to balance their professional and personal lives (Ensher et al., 2002). Research indicates that higher educational qualifications and relevant work experience significantly enhance a woman's chances of securing managerial positions. However, these opportunities are influenced by various factors, including race, marital status, and family obligations (Ashraf, 2016).

Furthermore, the representation of women in leadership roles within films not only mirrors societal attitudes but also actively shapes them, reinforcing or challenging prevailing gender stereotypes (Sharma et al., 2024). Despite some advancements, systemic barriers and cultural expectations continue to obstruct women's progress in managerial roles across various sectors, including film and television. A more critical perspective suggests that the core issue resides within the production model itself, which systematically perpetuates disadvantage and discrimination (Eikhof & Warhurst, 2013).

2.2 Biological Sex Differences in Physical Ability

The integration of women into the workplace is often complicated by discussions surrounding biological differences, specially in jobs that entail significant physical demands. Striving for equality sometimes clashes with the realities of job requirements, leading to concerns about physical limitations arising from these differences. Careful consideration is necessary to ensure workplace safety and inclusivity without reinforcing stereotypes that could limit opportunities for women (Messing et al., 2000). Research suggests that men generally possess greater muscular strength and endurance, which can confer an advantage in physically demanding roles (RAND Corporation, 2015; Bermon et al., 2018). This dynamic is particularly relevant in industries like film production, where high levels of physical exertion and energy are often required, thereby contributing to the perception that women are less suited for

certain positions and resulting in their underrepresentation in such roles.

2.3 Sexual Harassment and Gender Perception in Leadership Roles

Women in male-dominated industries, such as film, encounter significant barriers due to gender-based discrimination and harassment. Studies indicate that harassment is notably more prevalent in fields where women are historically underrepresented. The traditional roles associated with these jobs often foster a culture of harassment, complicating accurate assessments of the issue due to underreporting and differing definitions of harassment across sectors (Fitzgerald & Cortina, 2018). Approximately 50% of women in various workplaces report experiencing sexual harassment, with those in male-dominated environments facing heightened risks compared to their counterparts in less gender-biased settings (Riddle & Heaton, 2023). Addressing these multifaceted challenges requires the creation of inclusive workplaces and fostering a cultural shift that recognizes and accommodates the unique needs of women in such roles.

2.4 Sociocultural Inclusion

In Sri Lanka, women's roles are influenced by a complex interplay of traditional values and patriarchal frameworks. While women have made notable strides in various sectors, significant challenges persist. Patriarchy continues to exert a strong influence, leading to gender discrimination and the marginalization of women in political and professional spheres (Setyawan, 2020). Traditional expectations often confine

women to domestic responsibilities, which limits their participation in crucial decision-making processes (Herath, 2015). Although there have been improvements in education and healthcare, barriers remain that hinder women's access to equal opportunities in the labour market (Chandrika, 2019).

The conflict between modern values and traditional beliefs complicates women's status, with many adhering to conventional roles even amid feminist influences (Perera, 2016). Within the Sri Lankan film industry, gender bias manifests through both direct and indirect barriers, preventing women from fully participating in this demanding profession. Cultural pressures frequently discourage women from committing to projects that require extended time away from family responsibilities.

2.5 Gender Bias Perception and Stereotyping

Women face considerable obstacles in securing leadership roles, including biases, insufficient representation and limited advancement opportunities. The underrepresentation of women in top management and on boards of directors is shaped by both biological factors and socially constructed gender challenges (Galsanjigmed & Sekiguchi, 2023). In many Asian societies, including Sri Lanka, gender bias and sociocultural exclusion are deeply entrenched, with traditional gender roles perpetuated through cultural norms and values. Family obligations and cultural expectations often restrict women's access to education and employment, thereby limiting their full participation in public life (Perera, 2016).

In the film industry, this gender bias extends beyond family obligations. Women frequently encounter hostile work environments where their capabilities are questioned or undermined by male colleagues. Testimonies from female industry workers highlight the challenges they face when navigating their professional lives amid patriarchal social expectations surrounding womanhood (Peiris et al., 2023). Such challenges diminish women's confidence and contribute to their underrepresentation in key creative and leadership roles within the industry. Addressing these issues necessitates policy interventions and a cultural shift to promote inclusivity, enabling women to engage more confidently in traditionally male-dominated sectors.

3. METHODOLOGY

This study employs a qualitative approach to address the research question: Why is there a low managerial representation of women in the Sri Lankan cinema industry, despite the significant number of qualified female professionals with a background in film management? The aim is to achieve the stated research objective.

Data were collected through in-depth individual interviews, allowing respondents to provide detailed explanations in response to the questions posed. The interviews were conducted with five females who possess strong professional and academic qualifications in film management, as well as five males currently working in managerial roles within the Sri Lankan film industry. Participants were selected through

convenience sampling, with snowballing technique employed to extend the sample.

Thematic analysis, as outlined by Braun and Clarke (2006), was utilized to analyze the rich data collected from these interviews. This analysis emphasizes significant findings regarding gender discrimination in managerial roles within the Sri Lankan film industry.

4. RESULTS AND DISCUSSION

The study, "Gender Dynamics in the Sri Lankan Cinema: Unpacking the Underrepresentation of Women in Managerial Roles," drew upon data from ten individual interviews conducted with five females who possess strong professional and academic qualifications in film management and have experience in filmmaking managerial roles, as well as five males currently working in managerial roles within the Sri Lankan film industry.

It was possible to identify the three findings on the themes and sub-themes/codes that emerged following the Thematic analysis, as outlined by Braun and Clarke (2006) (Table 1).

Table 1 Initial themes and subcodes

Initial Themes	Subcodes
Biological sex differences in physical ability	Limited Physical Strength
	Inadequate Sanitation
	Sexual Harassment

Gender bias in Sociocultural Inclusion	social and cultural barriers
	traditional thinking
	family obligations
	nature of industry behavior
Gender bias Perception and Stereotyping	Workplace Incompatibility
	Male-Dominated Industry
	Limited Opportunities
	External Social Perceptions

Each finding can be substantiated by the narratives elicited from the interviews, as follows:

A. Biological sex differences in physical ability

When examining the roles of males and females in society, it's important to recognize that while postmodernism advocates for equal recognition and opportunities for both genders, significant biological differences remain. These differences, particularly in areas such as physical strength, labor capacity, and endurance, cannot be entirely disregarded when discussing fairness and equal opportunities and recognition. Men and women have distinct physiological characteristics, including differences in muscle mass, physical stamina, and their ability to perform strenuous labor.

the film industry, these biological distinctions can be especially relevant as an industry that require significant physical exertion. The role of a "production manager", for instance, is a demanding position that involves managing multiple logistical aspects, such as handling locations, costumes, equipment, accommodations, and catering. This job requires a high level of physical energy, endurance, and the ability to cope with a fast-paced, labor-intensive environment. While many women excel in leadership roles, the physical demands of a production manager's duties can, in some cases, present challenges for women due to their biological differences in physical strength and energy levels compared to men.

As per the comments hold by managerial females who are working in film industry,

"In my experience working as an assistant production manager, I really felt the strain of the job, especially on a film where we had multiple shooting locations far apart. For example, one day we started in Dambulla, shooting in a forest, then moved to Anuradhapura for a historical backdrop, and later that night, we were back in Dambulla. I had to shift between all these locations in just one day, and it wasn't just about traveling—I also had to manage the equipment and the people and all other logistics working with me. It was exhausting. I felt like, as a woman, I just didn't have the physical energy to keep up with such a demanding role. That exrience really discouraged me from taking on a similar position again." (KI4)

"On set, I've noticed that when guys are working as assistant directors or production managers, even though those are managerial roles, they don't just give orders. They actually get involved and help out with moving equipment and handling logistics, working alongside the crew. And I always think, if I were in that role, could I do the same? The truth is, I'd probably just end up giving commands because I physically can't lift or move those heavy pieces of equipment. I just don't have the energy for that kind of work, and honestly, I'd feel guilty if all I did was stand there and give orders without helping." (KI5)

In addition to physical abilities and strengths, biological factors also present challenges for women working on film sets, particularly when it comes to sanitation. Often, females on set lack access to comfortable and adequate sanitary facilities to meet their needs. This issue is especially pronounced during menstruation, as many women experience menstrual cycle-related fatigue. Consequently, women working in managerial roles on film sets face unique difficulties related to menstrual health management, which are often more challenging than those encountered by females holding managerial positions in other industries where sanitation facilities are more readily available.

The females are continued the same comment as below.

"When we're working on sets, the biggest issue we face as women is period poverty. There just aren't proper sanitary facilities available when we're on our period, and it's a real struggle to manage our needs during that time." (KI 1)

"Honestly, I really struggle during my period with intense pain, and it makes me feel super uncomfortable. Because of that, I often try to skip my duties on set so I can get some rest. I know that's not the best reason for the people I work with, and I totally get that, but it's just something we deal with as women. In the film industry, it feels like we're really affected by this, especially since it's such a demanding and non-stop environment." (KI 2)

When examining the biological sex differences in physical abilities among females in the film industry, the following quotations highlight that male colleagues possess a fair understanding of the physical and biological challenges that women face in their roles.

As per the male colleagues working in film making industry,

"When we have women working on our sets, we definitely recognize the physical and biological challenges they face. But honestly, given the nature of our industry, it's tough to give special consideration to those difficulties, even though we understand and want to. Once we start a film, our main focus is on getting the work done, and it's not really about making things comfortable for everyone on set." (KI 10)

"Before bringing a girl onto our set, we really think twice about whether she can handle it. You know, girls who are too pampered or used to a comfortable life often struggle with the challenges of working on a film set. They need to have some toughness, both physically and mentally. *(mal wage hadichchca ganu lamainta mewage wada karann ba. Yakku wage wenn oni)*. Even

though we have plenty of girls with good academic backgrounds around, finding ones who can really handle the demands of the job is a challenge." (KI 6)

Another significant aspect that highlights biological sex differences between men and women is the issue of sexual harassment faced by women in managerial roles within the film industry. Due to their biological identity, women cannot simply disregard the unwelcome advances and bargaining they encounter. This ongoing challenge underscores the need for a more supportive and respectful environment in the industry, where women's contributions can be recognized without the threat of harassment.

One of the females disclosed her ideas like,

"In my personal experience, I've definitely received sexual invitations from directors and actors while working on set. Honestly, I never know how to handle those situations as a girl. The guys we work with are also away from home for long periods, so it's pretty common for them to make those kinds of advances. Sometimes, it might just be a joke, but as women, we really don't want to deal with that kind of stuff, even if it's meant to be funny." (KI 1)

As per the above statements quoted from interviewers, the film industry presents unique challenges for women, particularly due to biological sex differences in physical abilities. Women often encounter significant physical demands and strenuous conditions that can be exacerbated by factors such as menstrual health management and inadequate sanitation facilities on set. While women have made strides in managerial roles, the reality remains that many face

difficulties in balancing their responsibilities with the physical toll that comes from both their biological differences and the demanding nature of the industry. Addressing these challenges is crucial for fostering an inclusive environment that supports women's contributions to filmmaking.

B. Gender bias in Sociocultural Inclusion

Gender bias and sociocultural exclusion remain significant challenges for women in many Asian societies including Sri Lanka, where deeply entrenched cultural norms and values often dictate gender roles. Women frequently encounter barriers such as limited access to employment opportunities, and traditional practices, including family obligations, which further restrict their freedom and participation in public life. These sociocultural barriers not only stifle women's potential but also perpetuate a cycle of inequality, underscoring the urgent need for transformative change in attitudes and policies to promote gender equity and empower women in these communities.

In the Sri Lankan film industry, socio-cultural barriers significantly hinder women's active and sustained participation. The nature of filmmaking requires a commitment that extends beyond conventional working hours; it is a continuous process that persists until the production achieves success. However, the social and cultural constraints faced by women often prevent them from making such commitments. Factors such as traditional gender roles, family responsibilities, and safety concerns can limit their ability to engage fully in this demanding industry. As a result, these barriers not only restrict women's contributions but also impact the diversity and richness of storytelling in Sri Lankan cinema.

In Sri Lankan society, cultural barriers significantly shape the imagination of women as family-driven and family-centered individuals. From childhood, women are often sheltered and protected by their family members, and this dynamic shifts to their husbands after marriage. This framework defines a woman's behavior within the cultural context of Sri Lanka. When women attempt to transcend these social and cultural boundaries, they frequently encounter discrimination and resistance from the broader society. Such challenges underscore the need for a reevaluation of traditional gender roles to promote greater equity and inclusion for women in all aspects of life.

The filmmaking industry is not one that can afford to impose strict boundaries on managerial women. Given the nature of the industry, women must navigate its various dimensions while maintaining their commitments. Filmmaking extends beyond traditional working hours, often involving night shoots at diverse locations, which can pose safety and protection concerns. However, the social and cultural barriers faced by women intersect with the demands of the filmmaking industry, creating significant challenges that discourage active female participation. This overlap leads to inactive female involvement in film making industry in Sri Lanka.

The females are working in managerial levels in film making industry commented like below.

"When we're working on films, we sometimes have to be away from home for long stretches, like 2 to 3 months. It all depends on the project we're working on. Plus, the shooting locations aren't always comfortable or public; they can be anywhere from forests to deserts. We can't predict or control that. It's tough to get permission from our families and owners to be away for so long. Sometimes, when we're gone for those months, it's our neighbors and villagers who have more issues than our family or friends. They get suspicious about what we're doing, asking things like, "Where are they? What are they up to?" Upon those questioning, they imagine some bad imagination about us". (KI 2)

"I'm fine on set as long as I'm working with my male friends who were with in from my university time, but that's not always the case. We often have to work with people from different backgrounds who have varying attitudes. Sometimes, I feel unsafe and uncomfortable in those situations. As women, we're always looking for a sense of safety and protection from those around us. That's just the way our culture is set up." (KI 2)

Another aspect to consider is the expected behavior of females, as dictated by the social and cultural dimensions of Sri Lankan society.

"When I was working as an assistant director on one of our productions, I noticed that when I spoke a bit loudly to manage my crew, it became a joke to some of the other people working with me. It made me feel uncomfortable. So, the next time, I purposely tried to speak more quietly." (KI 3)

When women behave outside of these societal expectations, it can lead to discomfort and a sense of inadequacy, causing them to feel that they do not belong in the filmmaking industry. This dynamic underscores the need for a cultural shift to embrace diverse expressions of femininity, allowing women to participate confidently and authentically in all facets of the industry.

In contemporary Sri Lankan society, women often juggle two significant roles: their family-centered responsibilities as wives and mothers, alongside their corporate careers. Despite the growing importance of their professional roles, women frequently find it challenging to neglect their family obligations due to the prevailing social and cultural frameworks. This balancing act can be particularly difficult in certain industries, such as filmmaking, where the demands of the corporate environment may conflict with familial duties. Consequently, women in these sectors often face societal and cultural pressures that complicate their ability to manage both roles effectively.

A married lady who has experience in film making managerial positions commented below.

Right now, I've taken a short break from the filmmaking industry because I have some family commitments to my husband and child. After getting married, I tried to balance both family and my career, but after having my baby, it's been really tough to manage. The industry is non-stop, and I feel

like I'll miss out on my baby if I keep working. I think this is the time I need to focus on my little one. (KI 4)

When examining men's perspectives on the social and cultural barriers faced by women in the Sri Lankan filmmaking industry, it appears that they possess a good understanding of these challenges. Their responses to these barriers can be both positive and negative, depending on the context. Some men may acknowledge the obstacles that women encounter and strive to create a more inclusive environment, while others may perpetuate stereotypes or contribute to the challenges that women face.

The men working in the film industry have ideas about the socio and cultural barriers faces by women like below.

"One time, my friend asked me for a good recommendation for an assistant director position. I suggested one of my female friends from university, but he flat-out said, "No." He even joked, "Girls just can't handle it." But I didn't back down because I know how capable she is, so I asked him why. He then mentioned that whenever they work with women, they often make excuses about family commitments." (KI 7)

Upon the nature and context of the filmmaking industry, it often appears to be a challenging and unsafe environment for women, particularly due to the behaviors and attitudes exhibited by men. Compared to other managerial sectors, women in the filmmaking industry often find themselves with limited control over these male behaviors and attitudes. This lack of agency can hinder their ability to navigate the industry effectively and underscores the need for a cultural shift to promote a safer and more respectful workplace for all.

The same comment is made by the males working in film industry like below.

"When we think about the negative behaviors of some guys in the filmmaking industry, it is impossible to really pay attention to the safety and protection of women. We need to be careful and look out for them. *(Meke inna pissoth ekka kello parissam karann ba)*" (KI 9)

The discussion surrounding gender bias and sociocultural inclusion highlights the significant challenges women face, particularly in industries such as filmmaking in Sri Lanka. Women often find themselves navigating complex dynamics that intertwine family responsibilities with professional aspirations, all while contending with deeply ingrained cultural expectations and male-dominated environments. Despite their capabilities and contributions, they frequently encounter discrimination and pressure to conform to traditional roles, which can undermine their confidence and participation in the industry.

C. Gender bias Perception and Stereotyping

Gender bias perception and stereotyping refer to the preconceived notions and attitudes people hold based on gender, which often leads to unequal treatment and opportunities for women holding managerial positions in film making industry in Sri Lanka.

Despite a considerable number of women in Sri Lanka holding academic and

professional qualifications suited for managerial roles in film production and management, the actual representation of women actively working in managerial roles in film production remains significantly lower compared to men. While these women possess the necessary qualifications, talents, and skills, gender stereotyping and bias prevalent within the industry contribute to their underrepresentation as per the below comments.

Industry professionals often hold stereotypical perceptions about women's capabilities in the demanding environment of filmmaking, which can limit opportunities for women in managerial positions. Moreover, the internalized perceptions that women hold about their own roles and capabilities within the industry also play a part in their reduced participation. This combination of external bias and self-perception creates barriers, resulting in fewer women assuming managerial roles in Sri Lanka's film industry, despite their qualifications and potential.

Considering the internalized perceptions that women hold about their own roles and capabilities within the industry highlighted the comments below.

"I've always felt uncomfortable working with males, unless they're part of my comfort zone. Beyond that, I just can't do it." (KI 5)

"The film industry here in Sri Lanka is so male-dominated, and it's hard for women to even think about competing. It feels like the stereotypes about us are so strong that working alongside men in this field is really challenging, almost impossible." (KI 3)

However, some overlapping comments highlighted feedback from interviewees who noted that, in some cases, working with men in the industry is perceived to be easier than working with women.

"Honestly, I find working with men easier than working with women. Guys tend to be more supportive and cooperative, while women are often really competitive, can't handle others well, and just don't have the patience." (KI 2)

Additionally, women often hold stereotypical beliefs about themselves, feeling that they are not given the opportunity to take on core roles in the filmmaking industry in managerial positions. This perception further limits their participation in leadership roles.

"As women, if we want to lead a production, we have to start from scratch by gathering our own team. We don't get offered opportunities or invitations from others." (KI 3)

Women in Sri Lanka's film industry often hold stereotypical beliefs about their capabilities in managerial roles, which discourages their active participation in the industry. This self-perception creates barriers to pursuing leadership positions.

Additionally, the perceptions and stereotypes held by men working in the film industry toward women in managerial roles are equally significant and should be taken into account when addressing gender disparities in the field.

"The females can not push and lead the task *(Kellanta meka ada gen yann ba)"* (KI 9)

The perceptions and stereotypes held by external society regarding women working in managerial positions the filmmaking industry also serve to discourage their participation and involvement in the field.

"One of my ex-boyfriends once told me that if I couldn't make a decision about my career, he would have to decide what to do about our relationship before getting married. He just couldn't handle a career like mine, where there's no set working hours and so much commitment involved. (KI 3)

"People in my village see me and my career really differently because I'm not the typical person they expect to see around here." (KI 1)

The comments above highlight how the discouraging stereotypes held by external society about managerial women working in the film industry contribute to negative impacts on their participation and advancement in the field.

Another aspect highlighted by interviewees is the perception created by society in children's minds regarding career expectations, particularly concerning female involvement in the filmmaking industry in Sri Lanka.

"I've never heard anyone encourage little girls to become film directors or production managers in their future careers. It honestly feels like filmmaking has turned into dream industry only for males." (KI 1)

"In school or from my parents, I never got any encouragement to pursue those kinds of managerial roles in the film industry. they did not have an imagination at least regarding that" (KI 5)

The gender bias perception and stereotyping significantly affect women's managerial participation in the filmmaking industry in Sri Lanka. Despite possessing the necessary qualifications and talents, women often encounter discouraging stereotypes both from external society and within their own self-perceptions. These biases create barriers that limit opportunities for women to assume managerial roles, as the industry remains predominantly male-dominated. Additionally, societal perceptions shape the career aspirations of young girls, often leading to a lack of encouragement to pursue managerial roles such as film director or production manager. Addressing these challenges is crucial for fostering a more inclusive environment that empowers women in the film industry and promotes their equal representation in leadership and managerial positions.

5. CONCLUSION

The findings of this research demonstrate that the underrepresentation of women in managerial roles within the Sri Lankan film industry is driven by a combination of biological, sociocultural, and perceptual factors. Women face significant physical demands, inadequate sanitary facilities and sexual harassment on sets, which exacerbate their challenges. Additionally, deep-rooted sociocultural norms, such as traditional gender roles and family obligations, limit their participation and progress in the industry. Gender stereotypes held both by men in the industry and society at large further perpetuate the belief that women are not suited for managerial roles in cinema. While some men acknowledge these barriers, the male-dominated culture of

filmmaking continues to hinder substantial progress. Addressing these challenges requires transformative change in the industry's approach to gender inclusion, ensuring that women can fully participate and thrive in managerial roles in Sri Lankan cinema.

6. LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

A limitation of this study is its reliance on a small, qualitative sample, which may not fully capture the diversity of experiences across the entire Sri Lankan film industry. Additionally, the study is based on self-reported data, which could introduce individual biases. Future research should consider a larger and more diverse sample, as well as mixed-method approaches that combine qualitative and quantitative data to provide richer, more nuanced insights. Expanding the focus to include organizational policies and regional comparisons could also deepen understanding of gender dynamics and inform effective interventions for greater inclusivity in film industry management.

7. Participants' Profile

Females working in managerial positions in the film industry who possess strong professional and academic qualifications in film management:

Data Collection Method	Participants	Key Informant (KI)	Marital Status	Gender	Age	Educational Qualification in Film Management	Managerial Roles of Industry experience	No. of Experience in Industry
Individual Interview 1	Females who possess strong professional and academic qualifications in film management	KI 1	Married	Female	43	Professional Fellowship - International Film Business	Producer, Director	2 short films, 3 mainstream feature-length films
Individual interview 2		KI 2	Unmarried	Female	26	BA (Hons) in Film and Television	Assistant Director	15+ short films, 1 mainstream feature-length film
Individual Interview 3		KI 3	Unmarried	Female	28	BA (Hons) in Film and Television	Assistant Director	15+ short films, 1 mainstream feature-length film
Individual Interview 4		KI 4	Married	Female	36	Professional Fellowship - International Film Business	Producer, Production Manager	5+ short films, 2 mainstream feature-length films
Individual Interview 5		KI 5	Separated	Female	35	Diploma in Filmmaking	Director, Producer	5+ short films, 1 mainstream feature-length film

Males currently working in managerial roles within the Sri Lankan film industry:

Data Collection Method	Participant	KI	Gender	Age	Educational Qualification in Film Management	Managerial Roles of Industry experience	No. of Experience in Industry
Individual Interview 6	Males currently working in managerial roles within the Sri Lankan film industry.	KI6	Male	26	BA (Hons) in Film and Television	Director, Assistant Director	15+ short films, 2 mainstream feature length films
Individual Interview 7		KI7	Male	26	BA (Hons) in Film and Television	Production Manager	15+ short films, 2 mainstream feature length films
Individual Interview 8		KI8	Male	38	N/A	Assistant Director	10+ mainstream feature length films
Individual Interview 9		KI9	Male	27	BA (Hons) in Film and Television	Production Manager	10+ short films, 1 mainstream feature length film
Individual Interview 10		KI10	Male	28	BA (Hons) in Film and Television	Director, Assistant Director	15+ short films, 1 mainstream feature length film

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The Impact of Customer Attitudes Towards Artificial Intelligence (AI) Usage on Purchase Intention: Special Reference to Fast Food Restaurants in Sri Lanka

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ABSTRACT

Artificial intelligence is revolutionizing various industries by streamlining operations and enhancing customer satisfaction. Although the Sri Lankan restaurant industry is adopting artificial intelligence to enhance their operations and customer experience, it is still in its early stages. A pilot study found that 95% of customers do not encounter artificial intelligence technologies or automated systems during their dining experiences, but they expect artificial intelligence to provide them with a unique customer experience. With the limited literature, there is a lack of understanding of attitudes towards artificial intelligence usage in the restaurant sector and how it affects customers' behavioral intentions. In order to fill this gap, this study develops a structural model that outlines the impact of attitude towards artificial intelligence usage on the behavioral intentions of restaurant customers. Following the quantitative research design and the deductive approach, this study identified 384 respondents residing in the Western Province of Sri Lanka who experienced artificial intelligence -related technology in the restaurant sector. Using the purposive sampling method, data were collected through a self-administered questionnaire, and regression analysis was conducted for data analysis. The findings revealed that factors such as experience, advantages, and disadvantages significantly influence behavioral intention. Experience emerged as the strongest predictor of behavioral intention. Also, it has been identified that social skills have no impact on behavioral intention. Hence, the Sri Lankan restaurant sector should focus on utilizing artificial intelligence to enhance operation efficiency and customer satisfaction to gain long-term profitability.

Keywords - **Artificial Intelligence, Attitudes, Behavioral intention, Restaurant.**

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1. INTRODUCTION

Online commercial services and e-commerce have benefited greatly from the widespread application of artificial intelligence (AI) (Qin et al., 2022). AI plays a strategically important role in this era of digital acceleration, providing specific use cases across a range of important industries including healthcare, retail and e-commerce, food tech, banking and financial services, supply chain and logistics, travel, media and entertainment, manufacturing, fashion, hospitality, etc. (Takyar & Takyar, 2019). Businesses are using AI more and more to streamline and enhance their operations. Surprisingly, 64% of businesses think artificial intelligence will boost their whole output (Haan, 2023). Most importantly, AI has a favorable impact on consumers' purchasing decisions (Malhotra & Ramalingam, 2023; Bhagat et al., 2022). Further AI continues to enhance customer satisfaction, which makes it even more important given the current circumstances (Bhagat et al., 2022).

Cansler (2024) stated that among different industries, the world's technologists predict that artificial intelligence will eventually make a significant impact on restaurant operations in 2024. Also, it has highlighted that by year's end, the worldwide food automation market is projected to reach $14 billion, and by 2027, the use of robotics and artificial intelligence in fast food restaurants may rise by 69% (Cansler, 2024). AI in the context of the food service sector "*refers to the ability of machines to simulate intelligent human behavior, such as learning, reasoning, and problem-solving. In restaurants, AI can be applied to automate and optimize various processes, ranging from customer service to kitchen operations*" (AI in the Sri Lankan Restaurant Industry: Business Term Explained, 2024).

AI has traditionally been used by restaurants to boost revenue and enhance customer experience through personalized marketing and demand forecasting (Asaki & Trepinski, 2023). AI has the potential to revolutionize the way restaurateurs run their daily operations and serve their esteemed clientele. It can liberate chefs' time to explore their culinary creativity and enable guests with simple selections and tailored experiences (Panel, 2024). Restaurants may increase operational efficiency, lower errors, and improve the customer experience by implementing robotic process automation technology, which frees up workers to concentrate on quality assurance and customer service (Cansler, 2024).

According to AI in the Sri Lankan restaurant industry: Business term explained (2024), the restaurant industry in Sri Lanka is rapidly adopting AI to enhance operations and customer experience. With a diverse range of cuisines and a rich cultural heritage, the industry is gaining global recognition. AI can help address challenges in the sector, boosting productivity, enhancing customer experiences, and increasing profitability. Further The Sri Lankan restaurant industry is expected to see a surge in AI adoption, enhancing operations, data analysis, and customer interactions.

However, since there are no credible sources available to identify the level of engagement of Sri Lankan fast food restaurants with AI, researchers conducted a pilot study to identify Sri Lankan fast food restaurants'

level of engagement with AI. Researchers developed a questionnaire and contacted 30 customers who frequently visit fast food restaurants in Sri Lanka. The results revealed that 95% of customers have not encountered AI technologies or automated systems in restaurants during their dining experiences, but they expect AI technologies in restaurants to get a better customer experience in Sri Lanka. Also, when reviewing the literature related to the dining experience with AI in the fast food restaurant sector, researchers have identified two major research areas. First, few studies empirically study the dining experience related to AI in Sri Lankan context. Second, there are limited numbers of studies conducted to identify the dinners attitude towards AI. Therefore, this study is going to address the relevant research gap by contributing to the existing literature in the light of the following research questions. There are;

1. What is the impact of customer attitudes towards artificial intelligence usage experience on behavioral intention, with reference to restaurants in Sri Lanka?

2. What is the impact of customer attitudes towards artificial intelligence usage disadvantages on behavioral intention, with reference to restaurants in Sri Lanka?

3. What is the impact of customer attitudes towards artificial intelligence usage advantages on behavioral intention, with reference to restaurants in Sri Lanka?

4. What is the impact of customer attitudes towards artificial intelligence usage and social skills on behavioral intention, with reference to restaurants in Sri Lanka?

2. LITERATURE REVIEW

2.1 Technology Acceptance Model (TAM)

In this study, the Technology Acceptance Model (TAM) developed by Davis (1989) is extended to artificial intelligence (AI) in Sri Lankan fast food restaurants, addressing the limited research on its applicability in emerging markets, particularly in the early AI adoption stage in the Sri Lankan restaurant sector. This study explores the impact of AI-driven services and customer experience on behavioral intentions in restaurant settings, integrating experiences, advantages, and disadvantages into traditional Technology Acceptance Modeling (TAM) frameworks. Based on previous literature, Venkatesh et al. (2012) argued for extending TAM to incorporate contextual factors and indicate that experience with AI in restaurants is a strong predictor of behavioral intention. Hence this study expands AI in hospitality literature by contextualizing TAM within the Sri Lankan restaurant industry, highlighting experiential factors' role in technology acceptance, and providing valuable insights for academics and practitioners.

2.2 Customer attitudes towards Artificial Intelligence (AI) usage

Understanding client attitudes about the usage of artificial intelligence (AI) in hotels

and restaurants is a topic of research that has become more and more important in the hospitality industry. Attitudes are long-term, thorough assessments of people, objects, or circumstances (Baron & Byrne, 1987; Arachchi & Samarasinghe, 2023). It appears that consumers' expectations of the results of using (and interacting with) technologies are what lead to their trust in intelligent agents (Tussyadiah & Wang, 2014). For this reason, efforts to increase consumers' reliance on AI—that is, consumers following AI recommendations—must consider these expectations. This makes segmenting one's customer base and creating consumer profiles based on their attitudes toward AI crucial (Tussyadiah & Miller, 2018; Arachchi & Samarasinghe, 2023).

According to Ivanova et al.'s (2019) research, those who believe that services provided by robots are appropriate usually hold a favorable perspective on and intentions to use these robots. More recently, Cha (2020) showed how customers' views toward technology may be improved by motivated consumer ingenuity, increasing their readiness to engage with robots in restaurants. The use of robotic technology in restaurants has given the activities related to food and drink a new perspective. Robots have begun taking orders from a dining establishment. A well-known pizza company uses a robot with voice recognition and artificial intelligence capabilities to take orders from customers (Erdem & Sekar, 2023). Furthermore, because the Covid-19 pandemic is contagious, it has made it possible for the number of robotic services to rise (Sinha et al., 2021). People's attention to cleanliness and hygiene issues has increased recently due to dangerous viruses

and infectious diseases. People are therefore more confident when they ride in robotic vehicles that are not contaminated with illnesses and hazardous materials (Feng & Wang, 2020). In addition, having a favorable outlook on AI technology improves not just the user's experience but also their level of pleasure with it. Customers who have a positive outlook on services powered by AI are more likely to be satisfied with their experiences at such establishments (Park & Gretzel, 2020).

Therefore, customer attitudes towards AI-powered services, such as check-in procedures and concierge services, and customers' overall happiness levels were shown to be strongly positively correlated in one study by Li et al. (2019) that looked at customer satisfaction in a hotel environment. This empirical study, which combined survey data with sentiment analysis of customer attitude, emphasizes how important consumer attitudes are in determining how satisfied they are with the hotel sector (Li et al., 2019). Furthermore, the study done by Ivonvo et al. (2018) examined whether respondents' opinions about the benefits and drawbacks of service robots in comparison to human service employees, as well as their expectations regarding the human-robot interaction (robot social skills and service experience), are related to their attitudes toward service robots in hotels. However, due to Sri Lanka's low utilization of robots, this study intends to concentrate on the emerging and popular field of artificial intelligence. Based on the above discussion, the following independent variables were identified to achieve the aim of this paper:

2.2.1 Experience

When customers engage with smart technology—such as speech recognition, for instance—they have distinct experiences that influence their perceptions and ensuing behavior (Kim and Baek, 2018). Smart shops blend technology innovations with physical stores to provide customers with a unique shopping experience and purchasing process (Chang and Chen, 2021; Roy et al., 2019). When smart technologies are employed in smart shops that are unfamiliar to them, customers may visit these establishments to satisfy their curiosity and see what new technologies are like. Consequently, customers may have a more satisfying and joyful shopping experience if businesses are smart (Chang and Chen, 2021). According to Erdem et al. (2023), Robots can provide accurate service delivery, great efficiency, and a robust service capacity in the food and beverage industry. In this sense, giving clients a nice service experience can encourage positive behavioral intentions (Guan et al., 2021). Behavioral intention refers to the likelihood of a person using mobile messaging chatbots, and this intention is closely linked to attitudes towards the technology. In other words, by assessing a customer's attitude towards chatbots, we can predict their likelihood of using them (Eeuwen, 2021). Because chatbots operate on simple rule-based systems, more advanced chatbots leverage AI to provide more dynamic and context-aware interactions, learning from user interactions to improve their responses over time. In the Sri Lankan context, customers who perceive that adequate resources and infrastructure are available are more likely to have a positive behavioral intention towards using chatbots. Specifically, customers who trust in the effectiveness of the necessary technical resources—such as internet infrastructure and the compatibility of systems and technologies—are more inclined to engage with chatbots. This is particularly relevant for restaurants in Sri Lanka that utilize chatbot technology to enhance customer experiences. Gümüş and Çark (2021) also concluded that there is a positive correlation between customers' perceptions of chatbots and their customer experience and behavioral intention. Furthermore, according to Venkatesh et al. (2003), users' attitudes and behavioral intentions towards continuing to use AI-powered services are positively impacted by AI systems that adapt to users' preferences and give a smooth experience. Therefore, based on this, we have developed hypotheses as,

$H1_1$: There is a significant impact of customer attitudes towards Artificial Intelligence (AI) usage experience on behavioural intention, reference to restaurants in Sri Lanka.

2.2.2 Disadvantage

While advancements in robotics might benefit businesses, they can also have negative effects on the service industry (Parvez et al., 2022). According to Chan and Tung (2019), service robots have better levels of sensing (e.g., visual impressions) and intelligence (e.g., rapid problem-solving), but lesser levels of influencing compared to humans. Over-introduction of robots in tourism and hospitality, which rely heavily on human interaction, may have a negative impact on mental health due to the

absence of social interaction. According to Lee et al. (2019), robots can perform routine, repetitive, dangerous, and sophisticated activities that are difficult or impossible for human personnel. However, they should not be used for traditional or extraordinary care for high-value guests. According to Hwang et al. (2021), customers' perceptions of privacy, financial, temporal, performance, and psychological risks negatively impact their attitudes and behaviors (Erdem et al., 2023). Furthermore, technical issues are among the drawbacks that contribute to customer discontent in Sri Lanka. Since Sri Lanka is a developing nation and restaurants using AI are still in the early stages of development, any malfunctions can lead to a very unsatisfactory experience for customers and possibly a lot of negative reviews (Perera & Lenora, 2022). Cultural attitudes towards technology can impact customer behavior. In Sri Lanka, traditional values may lead to skepticism towards AI, affecting overall acceptance and intention to use such technologies (Fernando & Khandakar, 2020). According to Karunarthne et al. (2022), many customers in Sri Lanka may lack familiarity with AI applications, leading to apprehension. A lack of understanding can result in negative attitudes and decreased behavioral intention to use these tools. Therefore, based on this, we have developed hypotheses as,

H2₁: There is a significant impact of customer attitudes towards Artificial Intelligence (AI) usage disadvantages on behavioural intention, reference to restaurants in Sri Lanka.

2.2.3 Advantage

The quality of services is greatly enhanced by robotic services. In the context of consumer loyalty behaviors, this has a beneficial impact on revisit intentions (Çakar & Aykol, 2020). AI in the Sri Lankan restaurant industry: business term explained (2024) The restaurant industry in Sri Lanka has intense competition, which calls for effective resource and operational management. There are several areas where artificial intelligence may increase overall efficiency and optimize procedures, from staff scheduling to inventory management. Staff scheduling can be automated by AI-powered systems, which take into consideration variables like worker availability, skill level, and workload. Artificial intelligence (AI) algorithms have the ability to create optimal schedules that balance labor costs and staffing levels by evaluating both historical and current data.

AI is capable of accurately forecasting demand by analyzing supplier information, market trends, and sales data. By doing this, eateries may maximize their stock levels, cutting down on waste and guaranteeing that their most popular foods are constantly available. AI can also help with menu planning by examining sales data, consumer comments, and preferences. Restaurants can increase customer happiness and revenue by customizing their menus to satisfy customer wants by analyzing popular items and trends. Research has shown that customers' perceptions of the robotic technology employed in restaurants—such as its animation, cuteness, intelligence, and safety—have a positive impact on their level of pleasure and likelihood of visiting again

(Jang & Lee, 2020). Furthermore, according to De Kervenoael et al. (2020), visitors' behavioral intentions are influenced by robots' perceived utility, which raises their perceived worth. According to Gonzalez et al. (2007), a customer's past experiences with a service have an impact on their future behavioral intentions. Additionally, the survey shows that over 50% of purchasing intentions are dependent on quality and satisfaction. It has been demonstrated that "quality, perceived value, and satisfaction are all good predictors of behavioral intentions" (Chen & Chen, 2010, p. 31). Therefore, based on this, we have developed hypotheses as,

$H2_1$: There is a significant impact of customer attitudes towards Artificial Intelligence (AI) usage advantages on behavioural intention, reference to restaurants in Sri Lanka.

2.2.3 Social Skills

Robotics and artificial intelligence are not yet often utilized in restaurants. Managers, however, are searching for fresh approaches to using these technologies to set themselves apart and deliver exceptional customer service. Furthermore, social and emotional competencies are frequently prioritized in the restaurant industry to attain excellence in customer pleasure, hospitality, bilateral interactions and interaction (between the staff and the patron), and customer loyalty (Blöcher & Alt, 2021). Therefore, managers favor using robots for all duties, with the exception of those requiring emotional intelligence and social skills (Ivanov et al., 2020). Users who have a favorable outlook on AI's social abilities are more likely to have enjoyable, interacting interactions with the technology. Improvements in customer satisfaction have an immediate impact on future actions. Customers that have a positive experience with an AI-powered chatbot are more likely to want to keep using it for future support or information needs (Huang et al., 2019). There is a strong correlation between how people see AI's social qualities and their level of confidence in the technology. Users are more inclined to put their faith in AI systems if they think they can communicate successfully with empathy and understanding. When people have a favorable impression of AI's social skills, they are more likely to trust it, which can influence their behavioral intentions and actions.

An important factor in determining an AI's behavior is how human-like its social abilities are perceived to be. Users who have a favorable impression of AI's emulation abilities may indicate a desire to make more regular use of systems powered by AI. Because the success of AI's social skills impacts user acceptability and continuous usage, this is especially important in applications like virtual assistants (Nass et al., 2005). Attitudes about AI's social abilities are strongly correlated with results such as user happiness and loyalty. Users are more likely to be satisfied and to intend to continue using AI-driven services or apps if they have favorable encounters with AI systems that display effective social skills. Sustained use and interest might be the outcome of high levels of pleasure brought on by pleasant social interactions (Huang et al., 2019). Therefore, based on this, we have developed hypotheses as,

H2$_1$: There is a significant impact of customer attitudes towards Artificial Intelligence (AI) usage social skills on behavioural intention, reference to restaurants in Sri Lanka.

3. METHODOLOGY
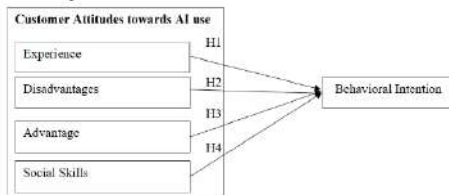
Figure 1 Conceptual Framework

The study adopted a conceptual framework delineating the relationship between attitude towards robots use experience, disadvantage, advantage, social skill, and acceptability of robot use on behavioral intention. The study follows positivism as the research philosophy and deductive research approach. Researchers collect data, analyze it, and come up with findings with minimal inference into the natural setting. The study is a cross-sectional study.

A survey research strategy was used to test the proposed conceptual framework empirically. An online questionnaire has been developed and distributed among the respondents. The online questionnaire was composed of 26 questions. Respondents' level of agreement was measured between the ranges of 1 and 5. Hence, the five-point Likert scale has been used to measure data. Before commencing the survey, the questionnaire was pre-tested with a pilot survey with 30 respondents to clarify the

clarity and understandability of the questions.

Using purposive sampling, data were collected from 384 individuals who are citizens of the western province and have knowledge about AI with previous experience in AI-related restaurants and are requested to fill out the questionnaire. According to Krejcie & Morgan's (1970) sample size was determined and, the Sri Lanka Food and Beverage Association (2023) found that consumers in the Western Province exhibit a greater preference for technology-driven eating experiences, such as automated ordering systems and AI-based customer involvement. Further, before attending the survey, respondents were asked to fill out three filtering questions related to AI restaurants in the western province. Descriptive statistics were used to describe the sample profile. To examine the relationship between the variables, multiple linear regression analysis was used.

4. DATA ANALYSIS

4.1 Demographic Analysis

In Western Province, 384 individuals were given questionnaires to fill out. The survey received 315 responses, with 69 respondents declining to participate. As a result, the effective response rate is 82%. Out of those, most of the respondents were female (78.1%) compared to male (21.9%) respondents. Many respondents in this data collection are between the ages of 30 and 39, and it was 59.68% of the total sample. Furthermore, according to Table 1, monthly income level 60>80 accounted for roughly 59.81% of the total account. Furthermore,

the minimum account represented above 20>40, and it was 5%. Finally, the majority of the respondents were employed, and it was 57.46%.

Table 1 Demographic Analysis

Demographics	Frequency	%	Demographics	Frequency	%
Gender			Income Level		
Female	247	78.12	20>40	5	1.59
Male	68	21.58	40>60	50	15.87
			60>80	189	60
			above 80	71	22.53
Age					
Below 18	10	3.17	Level of Employment		
19 – 29	45	14.29	Student	10	3.17
30 – 39	188	59.68	Undergraduate	111	35.23
Above 40	72	22.86	Unemployed	02	1
			Employed	181	57.46
			Other	11	3.49

Source: Survey Data (2024)

4.2 Reliability Analysis

are considered aspects of reliability. Ensuring the reliability of the measures utilized The consistency and stability of the research tool or methodology employed in a study to evaluate behavioural intents and attitudes towards AI is crucial in this particular study. The internal consistency of these measurements can be measured with statistical techniques such as Cronbach's alpha. Reliability is usually regarded as acceptable when it is more than 0.7. It could be an indication that the measurements are not reliable enough to make inferences if the reliability coefficients for the equipment are below this cutoff (Zhang et al., 2023).

Table 2 Reliability Analysis

Variable	Cronbach Alpha	N of Items
Experience	0.665	4
Disadvantage	0.656	5
Advantage	0.778	4
Social Skill	0.698	2
Behavioral Intention	0.646	3

Source: Survey Data (2024)

4.3 Validity Analysis

The provided results include the Kaiser-Meyer-Olkin (KMO) measure and its associated significance (Sig) for five variables: Experience, Disadvantage, Advantage, Social Skill, and Behavioral Intention. The KMO measure assesses the sampling adequacy for conducting a factor analysis. Generally, a KMO value above 0.5 is considered acceptable. In this context, "Behavioral Intention" has the highest KMO value at 0.911, indicating that the data for this variable is highly suitable for factor analysis. "Experience" and "Advantage" also have reasonably good KMO values of 0.644 and 0.732, respectively. "Disadvantage" and "Social Skill," KMO values of 0.690 and 0.500, respectively. The significance values for all variables are 0.000, indicating that the correlations between items within these variables are significantly different from zero.

Table 3: Validity Analysis

Variable	KMO	Bartlett's Test	Status
Experience	0.644	0.000	Accepted
Disadvantage	0.690	0.000	Accepted
Advantage	0.732	0.000	Accepted
Social Skill	0.500	0.000	Accepted
Behavioral Intention	0.911	0.000	Accepted

4.4 Normality Test

The constructs' normality can be confirmed through Kurtosis and Skewness statistics. It refers those standard values between +3 and -3 are skewness ranges whilst is +7 to -7 for kurtosis to confirm the normality (Byrne, 2010).

Table 4 Normality Analysis

Variable	Skewness	Kurtosis
Experience	0.574	1.503
Disadvantage	0.783	1.823
Advantage	0.425	0.870
Social Skill	-0.024	1.766
Behavioral Intention	0.494	0.650

4.5 Multiple Regression Analysis

According to the table 5, adjusted R square is 0.777. According to that, it can be identified that experience, disadvantage, social skill and acceptability of AI use can explain 77.7 of the variations in the behavioral intention. This analysis's R value is 0.779 it shows a strong correlation between the acceptability of AI use and behavioral intention.

Table 5 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error	Durbin-Watson
4	.883d	.779	.777	.18171	2.093

Table 6 ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	36.275	4	9.069	274.645	0.000
Residual	10.269	311	.033		

Total	46.5 44	3 1 5				

As per Table 6, the model's significance level is 0.000, meaning it is below the 0.05 level. Consequently, the statistical significance of the regression model can be inferred.

Table 7 Coefficient

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.355	.124		2.855	.005
Experience	.398	.056	.31	7.157	.000
Disadvantage	-.150	.049	-.150	-3.057	.002
Advantage	.313	.047	.361	6.617	.000

According to table 7, coefficient table result shows that, advantage (B=0.313, P<0.000), experience (B=0.398, P<0.000),

disadvantage (B=-0.150, P<0.002). Therefore, all 03 hypothesis were accepted.

Table 8 Excluded Variable

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
4 MAX e	.019	.198	.843	.011	.074

According to table 8, social skill indicated as an excluded variable to the acceptability of AI use and behavioral intention.

5. FINDINGS AND DISCUSSION

In today's digital world, AI has emerged as a novel aspect for every industry. This study addresses this novel aspect in the content of restaurants. A noteworthy tendency emerges from the demographic analysis of the current study: most respondents are female, mostly between the ages of 30 and 39, and the majority earn more than 60,000 LKR. These results tend to be attributed to a variety of things. First of all, women are more likely to be represented in responses since they frequently have an important role in family dining decisions. The age group of 30 to 39 is typically characterized by increased disposable income and a greater willingness to explore new dining experiences, including AI-related restaurants, reflecting lifestyle trends that prioritize convenience and innovation. Additionally, individuals in this income bracket often seek out unique dining

experiences as a form of leisure, aligning with the Western Province's reputation for diverse culinary options and advanced technological integrations in the restaurant sector.

The current study results indicated that the most effective indicator of behavioral intention was shown to be experience. The findings of this paper align with existing literature. According to Smith (2021), there is a positive and significant relationship between customer experience and customers' intention to revisit a restaurant. Their study highlights that a positive customer experience can influence customers' loyalty and increase their behavioral intention. Similarly, Tsou et al. (2019) noted that a positive customer experience enhances customers' intention to recommend a restaurant to others, emphasizing the role of experience in shaping behavioral intention.

The study findings also indicate that customer attitudes towards artificial intelligence usage disadvantages have a statistically significant negative impact on behavioral intention with reference to restaurants in Sri Lanka. This finding aligns with prior research in the field. Empirical research has previously explored the relationship between negative aspects or disadvantages related to technology use and its impact on customer intention and satisfaction. For instance, in a study on customer reactions to technology failures in the service industry, Smith and Johnson (2018) found that service disruptions caused by technology glitches or disadvantages led to customer dissatisfaction and decreased intention to revisit the service provider.

These findings underline that technology-related disadvantages can negatively influence customer intentions. Similarly, Wu and Chen (2019) investigated the impact of technology-related frustrations on user satisfaction in online contexts. Their study found that encountering disadvantages or difficulties in using technology can significantly reduce user satisfaction and, subsequently, their intention to continue using the technology or service.

Furthermore, empirical research has examined the relationship between perceived advantages or benefits of technology use and their impact on customer intention and satisfaction. For instance, in a study investigating the influence of technology-assisted service quality on customer satisfaction and loyalty, Kim et al. (2020) found that customers who perceived advantages in technology use, such as convenience and efficiency, were more satisfied and had a higher intention to return. Similarly, Bhattacherjee (2001) conducted research on the technology acceptance model, demonstrating that perceived usefulness (akin to perceived advantages) significantly impacts user acceptance of technology. Users who perceive a technology's advantages are more likely to have positive customer attitudes towards the technology and, consequently, an intention to use it.

Surprisingly, social skill was indicated as an excluded variable to the acceptability of AI use and behavioral intention. According to researchers' social skills may not be as important in defining behavioral intention toward AI as individual variations like personality traits or past technological

experiences. Research indicates that characteristics such as technological readiness and openness to new experiences are more indicative of AI adoption than social skills (Parasuraman & Colby, 2015). As a result, social skills might not have a significant impact on behavioral intentions; hence, researchers exclude them in models. Additionally, when assessing the acceptability of AI, a lot of research places greater emphasis on perceived use and proficiency in technology than on social abilities. Instead of focusing on interpersonal skills, researchers frequently focus on cognitive factors, such as users' understanding of AI capabilities and their trust in technology (Kelly et al., 2023).

6. IMPLICATIONS AND FUTURE RESEARCH DIRECTION

This study had several significances that will require future strategies. Fast-food restaurants should make efforts to improve user interactions with AI systems in order to improve the customer experience, since these interactions have a direct impact on consumers' intents to make purchases. This means making AI technologies' user interfaces simpler so they are easy to use. Confusion and irritation can also be reduced by teaching employees to help clients use these technologies. In order to assist customers in seeing the value of AI in their decision-making process, managers should also vigorously advertise the technology's benefits through marketing efforts. Examples of these benefits include improved efficiency, shorter wait times, and customized dining experiences. Managers must be aware of the alleged drawbacks of AI in order to take proactive steps, such as

implementing feedback systems to collect client concerns and quickly resolve issues. Creating avenues for customers to express their opinions about their experiences with AI yields insightful information that supports ongoing advancements in both technology and customer service procedures. In the end, managers should prioritize optimizing the technological aspects of service over social interactions, as social skills have no apparent impact on behavioral intention. This may entail providing staff with continual training on AI systems and updating technology on a regular basis to improve functionality.

Considering future research, this study examines the attitude towards AI usage in restaurants in Western Province Sri Lanka. In order to better comprehend behavioral goals, future researchers could investigate AI applications in a variety of industries, including healthcare, supermarkets, and online enterprises. Future studies could integrate more independent variables, such as cultural characteristics or technological proficiency, to acquire a more comprehensive knowledge of the interactions between AI attitudes and behavioral intention. Because cultural differences in AI acceptability can be uncovered through cross-national comparisons, illuminating universal differences in perspectives and intents towards the application of artificial intelligence.

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Antecedents of consumer attitude towards affiliate marketing advertisements in retail sector: Special reference to generation Z consumers in Western province, Sri Lanka

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ABSTRACT

Affiliate marketing is a crucial aspect of digital marketing, offering businesses a cost-effective and performance-based method to engage with their target audience. Although it is an essential strategy, researchers have identified that consumers' trust in affiliate marketers is limited due to authenticity and commercialization concerns, with influencer fatigue indicating growing skepticism. Therefore, this study investigates the influence of consumer attitudes on affiliate marketing advertisements in Generation Z, particularly within the Western Province of Sri Lanka. However, there is a lack of comprehensive studies that bridge the gap between affiliate marketing theory and the practical execution of affiliate programs, particularly in the retail sector in Sri Lanka.

Following a quantitative research design and a deductive approach, this study focused on 384 respondents residing in the Western Province of Sri Lanka who have encountered or been exposed to affiliate marketing promotions within the retail sector among Generation Z residents. Data were gathered using a purposive sampling method through a self-administered questionnaire, and regression analysis conducted for the data analysis. The results showed that informativeness and entertainment significantly enhanced the perceived value of affiliate marketing advertisements among Generation Z. Social norms and irritation had a minimal impact on value perception. The study also found a strong positive correlation between the perceived value of

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affiliate marketing ads and overall consumer attitude. The results underscore the need for marketers to prioritize informative and entertaining content to build trust and positive perceptions, thereby shaping the future of affiliate marketing practices for this influential consumer group.

Key Words: Affiliate advertisements, Affiliate marketing, Generation Z

1. INTRODUCTION

Advertising is crucial in the marketing world, distributing nonpersonal information to persuade audiences about products, services, or ideas. It drives awareness, interest, and commerce across sectors, shaping consumer perceptions and bridging the gap between offerings and people (Dwivedi et al., 2021; Bovee, 1995). Digital advertising refers to the strategic utilization of Internet technologies by firms in order to disseminate promotional advertisements to their target clients (Mehta, 2020). The utilization of technology, the wide range of available materials, and the interactive nature of communication facilitate seamless and customized client engagement (Rizvanović et al., 2023). Digital marketing and advertising, including PPC, display, and social ads, has transformed how businesses engage with their customer base, outpacing traditional media and increasing advertising spending, making it effective for targeting worldwide customers (Chung et al., 2023). Digital marketing's global emergence is gaining momentum, with global advertising spending projected to reach 695 billion U.S. dollars in 2024, underscoring its growing global importance (Statista, 2023). Asia's growing internet penetration and

smartphone usage have led to rapid growth in digital marketing, accounting for 82.5 billion U.S. dollars in 2020. Similarly, in Sri Lanka, digital advertising expenditure increased by 53% in 2020 compared to the previous year, reflecting the rising significance of digital marketing in the country (Sri Lanka ICTA, 2023). These trends highlight the expanding opportunities and the transformative role of digital marketing in both global and local contexts. Affiliate marketing is a cost-effective and performance-based digital marketing strategy where businesses pay external publishers to generate traffic or leads, with affiliates motivated by commission income (Sudhagar, 2012). The advent of the Internet has significantly elevated the visibility and significance of affiliate marketing (Mangiò & Di Domenico, 2022). AM, characterized by its performance-based nature, has undergone significant growth in recent years. It involves collaborative efforts between businesses and affiliates, which may range from publishers to social media influencers. AM is a partnership between a business and an affiliate, acting as an intermediary to promote products or services. Affiliates promote the business through various channels, creating promotional content. They act as independent marketers, earning commissions based on sales or leads generated (Johnson & Brown, 2019). Sophisticated tracking systems are used to reward affiliates for their marketing efforts, monitoring customer interactions with their content using a unique affiliate ID (Bormann, 2016). If a client engages in a purchase or performs specific actions such as subscribing to newsletters, downloading

e-books or guides, filling out contact forms, requesting price quotes, or participating in webinars or events, comes under the interactions of affiliate advertisements (Rangaswamy et al., 2020). Users engage in various activities like interacting with interactive content, installing mobile apps, booking services, entering contests, sharing content on social media, writing reviews, and joining loyalty programs. AM operates on a commission-based model, promoting win-win dynamics (Mangiò & Di Domenico, 2022; Patrick & Hee, 2019). The 2020 Global Affiliate Marketing Survey conducted by Affiliate Summit also revealed that 94% of respondents considered AM to be an essential part of their overall marketing strategy (Allison O'Neil, Marketing & Affiliate Partnerships Manager at Hypelinks, 2024). Research shows 51% of individuals conduct most of their purchases online within a three-month period, excluding grocery items. Online shopping is increasingly recognized as a valuable component of digital marketing (Statista, 2023). Adobe's cross-generational research shows that Gen Z is the most receptive to internet advertisements, with 52% of this group expressing a positive attitude towards such ads (McCarthy, 2019). Within the realm of marketing, the advertising landscape holds a crucial position (Chung et al., 2023). In this context, the digital advertising domain has emerged as a notable element, characterized by a prominent transition towards performance-based models. Among these models, affiliate marketing has gained particular prominence (Ghosal et al., 2020). The retail sector dominates affiliate advertising, accounting for 43% of total revenue generated through affiliate marketing, followed by telecommunications, media, and travel sectors (Webster, 2023). Digital technology adoption is crucial for digital marketing automation, but Sri Lanka ranks 87th out of 141 on the CISCO Digital Readiness Index 2023. This discrepancy, coupled with deceptive affiliate marketing practices, affects affiliates and consumers' perceptions, leading to a decline in confidence. In Sri Lanka the emerging digital marketing environment in Colombo, were chosen as the study's context. Sri Lanka offers a unique scenario for understanding the efficacy of affiliate marketing techniques due to the growing engagement of Generation Z consumers with internet content (Statista, 2023). An excellent place to investigate affiliate marketing consumer behavior is Colombo, which is the nation's commercial center and has a high rate of digital engagement and technology adoption (Information and Communication Technology Agency of Sri Lanka, 2023). Sri Lanka's internet penetration rate is 40.1%, with Gen Z being a significant population. Baby Boomers are vulnerable to online commercials and misinformation, while Gen Z is more understanding of truth and data exchange (McCarthy, 2019). The study explores consumer attitudes' impact on affiliate marketing advertisements in Generation Z, particularly in Sri Lanka's Western Province. It highlights the potential of affiliate marketing in reshaping the digital marketing and advertising sector.

2. LITERATURE REVIEW

2.1 Informativeness

The concept of informativeness refers to the degree to which advertising drives customers to acquire products that fulfil their wants (Ducoffe, 1996), enabling them to generate surface-level assessments regarding the most advantageous service (Amr et al., 2022). This phenomenon has the potential to establish an equilibrium between the demands of consumers and the offerings of producers, hence facilitating a more optimised marketplace (Pollay & Mittal, 1993). This holds true for information conveyed through advertising. In essence, advertising serves the purpose of generating consumer awareness regarding various products and services (Iyer et al., 2005). Consequently, information disseminated through online media must exhibit qualitative attributes, including accuracy, timeliness, and utility for customers (Siau & Shen, 2003). Furthermore, the study conducted by Schlosser, Shavitt, and Kanfer (1999) provided empirical evidence supporting a favourable correlation between consumers' attitudes towards Internet advertising and its informative properties. Therefore, the role of information in marketing is of significant importance, as individuals are more likely to be attracted to commercials that provide incentives (Varshney, 2003). With all the literature of previous studies, the informativeness of the affiliate marketing advertisement may have a significant impact on the value of AM advertisements and, eventually, attitude towards AM advertisements. Based on that, the hypotheses could be formulated as follows.

H1: There is an impact of the informativeness on the value of AM advertisements in the retail sector, special reference to Generation Z western province of Sri Lanka.

2.2. Entertainment

Entertainment denotes "the ability of advertising to fulfill consumer needs for escapism, diversion, esthetic enjoyment or emotional release" (Ducoffe, 1995). Enjoyable advertisement grabs the attention of a consumers exposed to the ad (Ducoffe, 1995) at the same time, for the advertisement's message to immediately capture consumers' attention, it needs to be concise and funny (Zia, 2009). In a digital environment, advertisement has the capability of satisfying the hedonic needs of consumers by offering pleasant entertainment (Edwards Li, Lee, 2002). In a Web 2.0-based digital social media environment, 'the entertainment value lies in the ability to fulfil audience needs for emotional release, diversion and enjoy-ment' (Muntinga et al., 2011). Further Research on web advertising shows that entertainment in advertising can fulfil audience needs for escapism, diversion, aesthetic enjoyment, or emotional release, and thus, have a positive impact on consumers' perception of the advertisement value. Another study shows that Web advertising highly enriched with entertaining content achieves a more positive appraisal by recipients and leads to a higher target to revisit the homepage than websites without entertainment features (Raney et al., 2003). In this regard, entertainment can be considered as an important predictor of the value of

advertising besides being a crucial factor for internet advertising (Teo et al., 2003). With all the literature of previous studies, the entertainment of the affiliate marketing advertisement may have a significant impact on the value of AM advertisements and, eventually, attitude towards AM advertisements. Based on that, the hypotheses could be formulated as follows.

H2: There is an impact of the entertainment on the value of AM advertisements in the retail sector, special reference to Generation Z western province of Sri Lanka.

2.3. Social Norms

While advancements in robotics might Researchers in past studies have also made efforts to comprehend the significance of social impact in elucidating how social norms function as determinants of attitude (Amin & Ramayah, 2010). Social norms are a manifestation of the standards upheld by a particular group. When an individual belongs to many groups, such as family, friends, and colleagues, and the standards these groups uphold do not agree, a state of normative conflict arises (McDonald & Crandall, 2015). Conflicting norms can create polarisation among individuals, as they may be inclined to align themselves with their preexisting attitudes. This can be attributed to the varying assessments individuals make regarding the effectiveness of their actions when confronted with conflicting standards (McDonald & Crandall, 2015). When individuals encounter competing norms, they may attribute a decrease in effectiveness to their own behaviours as they observe others not conforming to the expected behaviour. On the other hand, certain individuals may perceive the fact that not all others are taking action as an indication of the urgent necessity for them, on a personal level, to take action.

According to Yang's (2007) study, which utilised the technology adoption model (TAM), it was shown that social influence played a notable role in shaping individuals' attitudes towards mobile advertising. The researcher further emphasised the relevance of technology acceptability in the context of mobile advertising uptake, particularly among the younger demographic (Yang, 2007). In addition, the acceptance and utilisation of new technology by individuals is notably influenced by the favourable disposition of a major individual in their social circle, such as a close relative or a marital partner (Venkatesh and Davis, 2000; Palka et al., 2009). A favourable social climate has been found to decrease negative attitudes towards mobile advertising, hence fostering favourable intents towards the use of mobile advertising (Zhang & Mao, 2008). With all the literature of previous studies, the social norms of the affiliate marketing advertisement may have a significant impact on the value of AM advertisements and, eventually, attitude towards AM advertisements. Based on that, the hypotheses could be formulated as follows.

H3: There is an impact of the social norms on the value of AM advertisements in the retail sector, special reference to Generation Z western province of Sri Lanka.

2.4 Irritation

Irritation refers to how the advertising message irritates and displeases consumers

(Kim & Han, 2014). While informativeness and entertainment relate to the perceived benefits of advertising, irritation relates to the perceived cost of advertising. Web advertising has the potential to present a wide range of information that may lead to confusion, distraction, and even overload for the viewer. Customers often experience dissatisfaction and adverse reactions towards advertisements that elicit annoyance, offence, disrespect, or excessive perceived as unpleasant and irritating, disrupting consumer engagement with a medium's content (Ducoffe, 1996). Consumer irritation with advertising is negatively correlated with perceived value and attitude. Factors contributing to dissatisfaction include advertising material, clutter, perceived lack of transparency, and erosion of privacy. Multiple factors contribute to annoyance or irritation, including product nature, intrusiveness, and perceived loss of control over behavior. Research focuses on specific characteristics of advertising that could irritate consumers (Edwards et al., 2002). With all the literature of previous studies, the social norms of the affiliate marketing advertisement may have a significant impact on the value of AM advertisements and, eventually, attitude towards AM advertisements. Based on that, the hypotheses could be formulated as follows.

H4: There is an impact of the irritation on the value of AM advertisements in the retail sector, special reference to Generation Z western province of Sri Lanka.

2.5 Value of Affiliate Marketing Advertisements

Companies commit significant financial resources to advertising on an annual basis. The optimal outcome for organisations would entail the implementation of effective advertisements that serve as reminders to guide consumers towards purchasing decisions. However, before prompting and guiding consumers into retail locations, the target demographic needs to possess awareness regarding the online advertisements amidst the vast multitude of comparable advertisements. The attainment of this objective necessitates the development of highly suitable web advertisements. In this context, the assessment of advertising value becomes a significant factor. It is vital to elucidate the determinants that impact the worth of advertising at present.

The web advertising model, developed in 1995, posits that the value of advertising has an impact on individuals' attitudes towards advertising. Ducoffe's model explains the functioning of advertising and the various aspects that impact attitudes towards it. In previous studies on mobile advertising, researchers have employed advertising value as a fundamental mechanism to assess the value of mobile advertising (Kim & Han, 2014). A study that examined the mediating role of advertising value in the relationship between the qualities of mobile advertising and attitudes towards mobile advertising within a cross-cultural environment. Comparably, the study conducted by Kim and Han (2014) demonstrated the role of advertising value as a mediator in the connection between cognitive, emotive, and

economic aspects and the desire to purchase. Based on that, the hypotheses could be formulated as follows.

H5: There is an impact of the value of AM advertisements on the attitude of AM advertisements in the retail sector, special reference to Generation Z western province of Sri Lanka.

2.6 Attitude towards the Affiliate Marketing Advertisement

The three component model of attitude comprises cognition, emotion, and conation. In this paradigm, the authors demonstrate that "attitude refers to an individual's comprehensive assessment of a particular concept." Nonetheless, Fishbein and Azjen (1980) provided a description that has gained significant acceptance among scholars. They defined attitude as an individual's positive or negative emotions towards an item. The formation of an individual's evaluations is influenced by the cognitive system and is characterised by emotive elements (Mustafi & Hosain, 2020).

The influence of attitudes on the efficacy of advertising is a significant factor for marketers, since they have the ability to strategically target and mould attitudes towards specific advertising messages. These attitudes subsequently impact the overall perception of the brand advertisement (Mehta, 2000). According to Fishbein and Ajzen (1975), attitude can be described as a pre-existing disposition that is acquired through learning in human beings. According to Kotler and Armstrong (2008), attitudes can be defined as an individual's

assessment and emotional response towards a certain object or concept. In the realm of advertising, attitudes have been conceptualised as a "cognitively acquired inclination to consistently react in a positive or negative manner towards advertising as a whole" (MacKenzie & Lutz, 1989). Based on that, the hypotheses could be formulated as follows.

H6: There is an impact of the relationship of the value of AM advertisements between informativeness, entertainment, social norms and irritation with the attitude toward AM advertisements in the retail sector, special reference to Generation Z western province of Sri Lanka.

3. METHODOLOGY

3.1. Ducoffe Web Advertising Model

Web advertising, also known as Internet advertising, is commercial content created by businesses to engage people about a product or service. Originating in the mid-1900s, it includes email marketing, display advertising, search engine marketing, native advertising, social media advertising, content marketing, video advertising, and banner advertising (Mackeviciute, 2022). The Ducoffe Web Advertising model, proposed by Robert J. Ducoffe, revolutionized marketing and advertising research by breaking traditional methodologies. Ducoffe's study on customer perceptions of online advertising during the early Internet's development revealed that perceived intrusiveness can be mitigated when content is highly valuable (Edwards et al., 2002). The web advertising model was proposed by Ducoffe (1995), drawing upon

the uses and gratifications theory (UGT). This particular model has been widely embraced as a means of forecasting individuals' views towards mobile advertising (Ducoffe, 1995) and theory posits that individuals select media content based on their cognitive and affective requirements, determined by their needs and incentives for obtaining satisfaction (Katz et al., 1973). The model incorporates three antecedents of advertisement value, namely informativeness, entertainment, and irritation. The theoretical framework proposed by Ducoffe (1996) will be employed to examine the impacts of the three factors preceding the advertising value model on consumers' expectations of quality (Ducoffe, 1996; Lou & Yuan, 2019). previous studies on mobile advertising have found that informativeness, entertainment, and irritation were significant predictors of the value of mobile advertising (Kim & Han, 2014).

4. DATA ANALYSIS

4.1 Demographic Analysis

The following data shows that among the persons who were exposed to and encountered affiliate marketing ads in digital platforms, male respondents made up 46.95% of the total, while female respondents made up 53.05% of the total.

Table 1: Demographics Analysis

	Category	Frequency	Percentage
Gender	Male	146	46.95%
	Female	165	53.05%
Employment Status	Student	158	50.8%
	Employed in Private Sector	121	39.9%
	Employed in Public Sector	11	3.5%
	Unemployed	17	5.5%
	Other	4	1.3%
Daily Digital Screen Time	Less than 1 hour	26	8.4%
	1-2 hours	44	14.1%
	2-4 hours	69	22.2%
	4-6 hours	83	26.6%
	More than 6 hours	89	28.6%

4.2 Reliability Analysis

Reliability in a study is determined by the consistency and stability of the research tool or methodology. In this study, ensuring the reliability of measures used to evaluate behavioral intents and attitudes towards AI is crucial. Internal consistency can be measured using statistical techniques like Cronbach's alpha, with a reliability coefficient above 0.7 indicating inference reliability (Zhang et al., 2023).

Table 2: Reliability Analysis

Variable	Cronbach Alpha	N of Items
Informativeness	0.896	5
Entertainment	0.902	5
Social Norms	0.855	3
Irritation	0.941	3
Advertising Value	0.850	3
Attitude toward AA	0.853	3

4.3 Validity Analysis

The provided results include the Kaiser-Meyer-Olkin (KMO) measure and its associated significance (Sig) for all variables: Informativeness, Entertainment, Social norms, Irritation, Advertising value, Attitude towards AA. The KMO measure assesses the sampling adequacy for conducting a factor analysis. Generally, a KMO value above 0.5 is considered acceptable. In this context, "Informativeness" has the highest KMO value at 0.873. The significance values for all variables are 0.000, indicating that the correlations between items within these variables are significantly different from zero.

Table 3: Validity Analysis

Variable	KMO	Bartlett's Test	Status
Informativeness	0.873	0.000	Accepted
Entertainment	0.866	0.000	Accepted
Social Norms	0.732	0.000	Accepted
Irritation	0.768	0.000	Accepted
Advertising Value	0.712	0.000	Accepted
Attitude toward AA	0.730	0.000	Accepted

4.4 Multiple Regression Analysis

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error	Durbin-Watson
3	.695	.483	.478	.544	1.823

According to the table 4, the adjusted R^2, it can be described that 48.3 % of the variance of the attitude towards the affiliate marketing advertisements is explained by the independent variables including the mediator variable which is value of the advertisement under this study. Therefore, around 51% of the variance of attitude towards the affiliate marketing advertisements is explained by other influencing factors which are not covered by the current study.

Table 5: ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	84.687	3	28.3	95.5	0.000
Residual	90.733	307	.296		
Total	175.421	310			

As per Table 5, the model's significance level is 0.000, meaning it is below the 0.05 level. Consequently, the statistical significance of the regression model can be inferred.

Table 6: Coefficient

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.15	.163		7.06	.000
Informativeness	.503	.052	.523	9.69	.000
Entertainment	.221	.048	.250	4.62	.000

Coefficient for informativeness is 0.503. It indicates that increasing one unit of informativeness causes to increase value pf advertising in 0.221 units while other independent variables remain constant. The significant value is 0.000 at 95% of confident interval level. According to Tables shows, Coefficient for subjective entertainment 0.197. It Indicate that increasing one unit of entertainment causes to increases value of advertising in 0.197 units while other independent variables remain constant. The significant value is 0.377 at 95% of confident interval level.

Table 7: Excluded Variable

Model	Beta In	T	Sig.	Partial Correlation	Collinearity Statistics Tolerance
Social norm	.012	1.19	.052	.111	.577
Irritation	.055	1.33	.193	.074	.876

According to table, social norm and irritation indicated as an excluded variable.

4.5 Mediating Effect

In addition to the above, the researcher has conducted Sobel test to assess the proposed mediating effect of advertising value and test H5. The Sobel test result outcomes are as follows:

Table 8: Mediating Effect

Variables	Sobel test		
	Test statistics	Std. Error:	p-value
Informativeness	1.3389	0.0264	0.018
Entertainment	4.3583	0.0356	0.000

The Sobel test showed a statistically significant mediating effect between informativeness, entertainment and the attitude towards affiliate advertisements at the 95% confident interval since all the p-values are less than 0.05. Then, it is concluded that H5 is accepted.

5. FINDINGS AND DISCUSSION

The study's conclusions highlight how entertainment and informational content influence Generation Z's perceptions of affiliate marketing. Since young consumers in Sri Lanka are increasingly using digital platforms, affiliate marketing that uses entertaining and educational material can boost positive attitudes and possibly enhance purchase intent (Ducoffe, 1996; Statista, 2023). Additionally, the study shows that social norms and annoyance have little effect, indicating that Sri Lankan customers might value content quality more than social influence. These results imply

that instead of depending only on social proof or other conventional marketing strategies, marketers should prioritize producing value-driven content that appeals to Generation Z.

6. LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCHERS

Antecedents of consumer attitude towards affiliate marketing advertisements in retail sector; special reference to generation z consumers in western province, Sri Lanka. Future research should explore Generation Z's evolving preferences and behaviors in response to affiliate marketing ads, considering emerging technologies like augmented and virtual reality. Comparative studies across cultural contexts and markets can provide a comprehensive understanding. Ethical considerations and privacy concerns are also crucial. Longitudinal studies can offer valuable insights for businesses and marketers.

7. CONCLUSION

This study investigates the impact of affiliate marketing (AM) programs on Generation Z in the Western Province of Sri Lanka. Affiliate marketing is a performance-based promotional strategy that involves collaboration between businesses and affiliates, who can take on various roles. Gen Z, known for their digital literacy and understanding of privacy, is particularly susceptible to affiliate scams. The study examines consumer attitudes towards AM programs, focusing on factors such as informativeness, entertainment, social norms, and irritation. The Ducoffe Web Advertising model is used as a theoretical framework, focusing on informativeness, entertainment, social norms, and irritation. The study recommends avoiding strategies that provoke irritation and focusing on honesty and trustworthiness in advertising. The study employs a deductive research approach with a quantitative design, examining causal relationships between variables. The results show a positive correlation between informativeness and entertainment and their impact on the effectiveness of affiliate marketing advertisements. However, 62% of the variance in consumers' attitudes remains unexplained. A hierarchical multiple linear regression analysis explains 48.3% of the variance in consumer views towards affiliate marketing advertisements, but 51% remains unaccounted for.

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Impact of the Social Media Usage on the Psychological Violence of Social Media Users in Sri Lanka

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ABSTRACT

In recent years, the pervasive influence of social media on individuals' lives has sparked growing concern about its potential repercussions, particularly in the context of psychological violence. This research delves into the intricate impact of social media usage on the psychological violence experienced by social media users in Sri Lanka. The study identifies four key dimensions—Highlight Reel, Social Currency, Fear of Missing Out (FOMO), and Addiction—as independent variables that may significantly contribute to the manifestation of psychological violence. The concept of the Highlight Reel refers to the curated and idealized versions of individuals' lives often presented on social media platforms, fostering unrealistic expectations and a sense of inadequacy among users. Social Currency explores the psychological impact of the pursuit of validation and social approval through online interactions, potentially leading to feelings of exclusion and worthlessness. Fear of Missing Out (FOMO) is examined as

a psychological state arising from the constant exposure to others' seemingly exciting experiences, potentially generating anxiety and distress among users who feel disconnected from these activities. Lastly, Addiction is investigated as a dimension encompassing the compulsive and excessive use of social media, exploring its association with heightened stress, anxiety, and aggression. The study employs a sample size of 384 participants from diverse demographics in Sri Lanka to capture a comprehensive understanding of the subject. The research aims to provide a nuanced exploration of the intricate interplay between social media usage and psychological violence. The findings of this study hold significant implications for both academic discourse and practical interventions, offering insights into the specific dimensions of social media usage

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that may contribute to psychological violence among users in Sri Lanka.

Keywords: Social media usage, psychological violence, highlight reel, social currency, fear of missing out, addiction

1. INTRODUCTION

In recent years, the pervasive influence of social media on individuals' lives has sparked growing concern about its potential repercussions on psychological well-being, particularly in the context of psychological violence. This research delves into the intricate impact of social media usage on the psychological violence experienced by social media users in Sri Lanka. The study identifies four key dimensions—Highlight Reel, Social Currency, Fear of Missing Out (FOMO), and Addiction—as independent variables that may significantly contribute to the manifestation of psychological violence. Social media is an internet-based form of communication that billions of people around the world use to share their ideas, information, and foster connections. Platforms like Facebook, Twitter, Instagram, and LinkedIn have become integral parts of daily life, with the number of users growing exponentially each year. As of January 2023, Sri Lanka had approximately 7.20 million social media users, accounting for 33.9 percent of the total population. This widespread usage highlights the significant role social media plays in modern communication and interaction. Social media platforms are often seen as multitasking tools that allow users to engage in various activities simultaneously. While these platforms enable efficient

communication and content sharing, excessive multitasking on social media can lead to distraction, reduced attention span, and decreased productivity. The use of social media varies based on socio-cultural, demographic, and psychological factors, with users frequently engaging in activities that satisfy their need for social belonging. However, social media is not just a domain of freedom and self-expression; it is also a space where various forms of violence, including psychological violence, can emerge. Psychological violence encompasses non-physical acts or behaviors that cause emotional or mental harm, such as coercion, humiliation, gaslighting, manipulation, and restraint. In the context of social media, psychological violence can manifest as cyberbullying, online harassment, stalking, and the spread of harmful content. The primary concern of this study is the relationship between social media usage and psychological violence among users in Sri Lanka. Despite the numerous benefits associated with social media, the potential for it to contribute to psychological violence is a significant issue that warrants thorough investigation. This study seeks to address the following research questions: What is the impact of social media usage on psychological violence among social media users in Sri Lanka? How do specific dimensions of social media usage (Highlight Reel, Social Currency, Fear of Missing Out, and Addiction) influence psychological violence among these users? The primary objective of this research is to identify the impact of social media usage on psychological violence among social media users in Sri Lanka. The specific objectives include examining the

effect of the Highlight Reel on psychological violence, investigating the influence of Social Currency on psychological violence, assessing the impact of Fear of Missing Out (FOMO) on psychological violence, and evaluating the role of Addiction in psychological violence. Based on the objectives, the study hypothesizes the following: There is a significant impact of the Highlight Reel on psychological violence among social media users in Sri Lanka, Social Currency significantly influences psychological violence among these users, Fear of Missing Out (FOMO) has a substantial impact on psychological violence, and Addiction to social media significantly contributes to psychological violence. Understanding the impact of social media usage on psychological violence is crucial for several reasons. Firstly, it provides insights into how modern communication tools affect mental health and social interactions. Secondly, the findings can inform policymakers, mental health professionals, and educators about the potential risks associated with social media usage, leading to better strategies for mitigating these risks. Lastly, this study contributes to the broader academic discourse on the relationship between technology and psychological well-being. The research employs a quantitative approach, utilizing surveys to collect data from a sample of 384 social media users in Sri Lanka. The study focuses on measuring the impact of the identified dimensions (Highlight Reel, Social Currency, FOMO, and Addiction) on psychological violence. Data analysis involves statistical techniques such as descriptive statistics, correlation analysis, and regression analysis to determine the relationships between variables and validate the hypotheses.

2. LITERATURE

2.1 Social Media Usage

Social media is defined as "the relationships that exist between networks of people" (Chen & Xiao, 2022). It encompasses a diverse range of capabilities, including seamless communication, instant messaging, image sharing, audio and video functionalities, rapid content dissemination, global connectivity, and direct interconnectivity with individuals worldwide (Senarath & Ratnayake, 2021). The exponential rise of social media platforms has revolutionized the way people of diverse age groups connect, collaborate, communicate, express, exchange, acquire, and upload information. For people of all ages, social media offers the cheapest and fastest access to the globe, and its usage is growing rapidly worldwide (Safdar et al., 2014).

Social media platforms like Facebook, Skype, Twitter, YouTube, and MySpace have been promoted as tools that bridge racial, class, and ethnic differences. According to Shrestha Lucky (2013), social media is a way for people to communicate with one another and exchange ideas and information in online groups (Ayhan et al., 2005). This expansive reach and integration into daily life make social media a significant factor in shaping modern social interactions and behaviors (Wickramanayake, 2022).

2.2 Social Media Usage in Sri Lanka

As of January 2023, Sri Lanka had approximately 7.20 million social media users, accounting for 33.9 percent of the total population. The rapid increase in social media usage in Sri Lanka mirrors global trends, highlighting the significant role these platforms play in communication and information dissemination. The majority of young people are quickly transitioning from traditional media like television and radio to social media, which has a considerable influence on their behaviors and social interactions (Safdar et al., 2014).

2.2.1 Highlight Reel

The Highlight Reel refers to the tendency of social media users to post curated and idealized versions of their lives. This phenomenon can lead to unrealistic comparisons and feelings of inadequacy among viewers. Research indicates that exposure to these idealized portrayals can negatively impact self-esteem and contribute to psychological distress (Przybylski et al., 2013). The constant comparison to others' seemingly perfect lives can exacerbate feelings of loneliness, depression, and anxiety, ultimately contributing to psychological violence (Bailey Parnell, 2017).

2.2.2 Social Currency

Social Currency refers to the value that individuals derive from the attention and validation they receive on social media. Likes, comments, and shares serve as social validation, reinforcing users' behaviors and encouraging them to seek more engagement. The pursuit of social currency can lead to addictive behaviors, where individuals prioritize online validation over real-life interactions. This constant need for approval can result in stress, anxiety, and other forms of psychological violence (Kolhar et al., 2021).

2.2.3 Fear of Missing Out (FOMO)

FOMO is a psychological phenomenon where individuals experience anxiety over the possibility of missing out on rewarding experiences that others might be having. This fear is often exacerbated by social media, where users are constantly exposed to posts about events, activities, and experiences they are not part of. Research has shown that FOMO is associated with negative emotional states, such as anxiety and depression, which can contribute to psychological violence (Przybylski et al., 2013).

2.2.4 Addiction

Addiction to social media is characterized by excessive use and an inability to regulate usage despite negative consequences. Symptoms of social media addiction include functional impairment, reduced performance, poor academic success, and disruption of psychological functioning (Hawi & Samaha, 2017). Social media addiction can lead to isolation, restlessness, and a constant need for engagement, which can negatively impact mental health and contribute to psychological violence (Margolin, 2013).

2.3 Psychological Violence

Psychological violence encompasses non-physical acts or behaviors that cause emotional or mental harm, such as coercion, humiliation, gaslighting, manipulation, and restraint (Mengü & Mengü, 2015). In the

context of social media, psychological violence can manifest as cyberbullying, online harassment, stalking, and the spread of harmful content. The anonymous and pervasive nature of social media can amplify these behaviors, leading to significant psychological distress for the victims (Stephenson et al., 2018).

2.4 Empirical Evidence

Highlight Reel and Psychological Violence: Empirical studies have demonstrated that exposure to the Highlight Reel on social media can lead to increased feelings of inadequacy and lower self-esteem. This can result in negative mental health outcomes, including depression and anxiety, which are key components of psychological violence (Przybylski et al., 2013).

Social Currency and Psychological Violence: The pursuit of social currency has been linked to addictive behaviors and increased stress levels. Studies indicate that individuals who heavily invest in their social media presence for validation are more likely to experience psychological distress and exhibit signs of addiction, which can contribute to psychological violence (Kolhar et al., 2021).

FOMO and Psychological Violence: Research on FOMO has shown a strong correlation between high levels of FOMO and increased anxiety and depression. Individuals experiencing FOMO are more susceptible to feeling excluded and lonely, which can lead to heightened psychological distress and violence (Przybylski et al., 2013).

Addiction and Psychological Violence: Social media addiction has been extensively studied, with findings consistently indicating its negative impact on mental health. Addicted individuals often experience higher levels of anxiety, depression, and loneliness, which are significant factors in psychological violence (Hawi & Samaha, 2017).

3. METHODOLOGY

The research design for this study is primarily quantitative, employing survey research as the main method of data collection. Quantitative research is defined as a systematic investigation that primarily focuses on quantifying relationships, behaviors, and phenomena. This approach is chosen for its ability to generate numerical data that can be subjected to statistical analysis, thus providing objective and reliable results. The goal is to identify the impact of social media usage on the psychological violence experienced by social media users in Sri Lanka. This research adopts an explanatory design, also known as causal research, which seeks to understand the cause-and-effect relationships by exploring how different variables interact and influence each other. The study aims to explain the relationships between the independent variables (Highlight Reel, Social Currency, Fear of Missing Out, and Addiction) and the dependent variable (psychological violence)
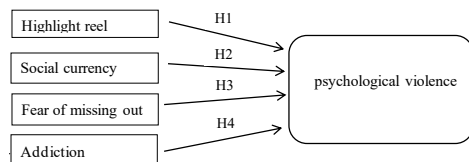
among social media users in Sri Lanka (see Figure 1).

A survey research strategy was employed to gather data from the participants. Surveys are effective tools for collecting large amounts of data from a sizeable sample population, allowing for the collection of

Figure 1. Conceptual Framework

standardized data that can be easily compared and analyzed statistically. The survey instrument was a structured questionnaire, designed to capture responses related to social media usage and experiences of psychological violence. A theoretical framework is a conceptual model of how one theorizes or makes logical sense of the relationships among the several factors that have been identified as important to the problem. It is crucial to comprehend what a variable means and what the various types of variables are because a theoretical framework provides the conceptual foundation for moving forward with the research and because a theoretical framework is nothing more than identifying the network of relationships among the variables considered important to the study of any given problem situation (Wells, n.d.). Based on previous research by Bailey Parnell (2017), Przybylski et al. (2013), Kolhar et al. (2021), and others, the conceptual framework of this study includes the Highlight Reel, Social Currency, Fear of Missing Out (FOMO), and Addiction as independent variables, with psychological violence as the dependent variable. The framework shows how social media usage influences psychological violence, providing a basis for developing hypotheses.

The population for this study consists of social media users in Sri Lanka. According to the Digital 2023 Sri Lanka data report, there were approximately 7.20 million social media users in Sri Lanka as of January 2023,

Formula 1. Sample size calculation

$$\text{Sample size} = \frac{\frac{z^2 \times p\,(1-p)}{e^2}}{1 + (\frac{z^2 \times p\,(1-p)}{e^2 N})}$$

which accounts for 33.9% of the total population. Given the large size of this population, a representative sample was necessary to make the study manageable and the results generalizable. To determine the sample size, the researcher used a formula for calculating the required sample for a population, setting the confidence level at 95% and the margin of error at 5% (see formula 1).

This resulted in a sample size of 384 participants. The sampling technique used was snowball sampling, a non-probability sampling method often employed when it is difficult to access the target population directly. This technique involves initial participants recruiting further participants from among their acquaintances, which helps in reaching a larger and more diverse sample. Snowball sampling is particularly useful in studies dealing with sensitive issues, as it leverages personal networks to facilitate participation. Data was collected using a self-administered questionnaire, distributed to the selected participants. The questionnaire was designed based on relevant literature and previously validated

instruments to ensure reliability and validity. It consisted of three sections: demographic information (i.e. Part A), questions related to the independent variables (i.e. Part B), and questions related to the dependent variable (i.e. Part C). The questionnaire used a Likert scale for most questions, allowing respondents to indicate their level of agreement or disagreement with various statements on a scale from 1 (strongly disagree) to 5 (strongly agree). This format is widely used in social sciences for its ease of use and effectiveness in capturing the intensity of respondents' feelings and attitudes. The collected data was analyzed using statistical techniques to identify patterns, correlations, and causal relationships between the variables. The following analytical methods were employed: Descriptive Analysis, Reliability Analysis, Validity Test, Correlation Analysis, and Regression Analysis. Descriptive Analysis involves summarizing the basic features of the data, providing simple summaries about the sample and the measures. Descriptive statistics include measures such as mean, median, mode, and standard deviation. Reliability Analysis assesses the consistency of the measurement instrument. Cronbach's alpha was used to evaluate the internal consistency of the questionnaire, ensuring that the items within each construct were reliably measuring the same underlying concept. Validity Test determines the extent to which the instrument measures what it is intended to measure. Construct validity was assessed through factor analysis, ensuring that the questions grouped together in a way that made theoretical sense. Correlation Analysis examines the strength and direction of relationships between pairs of variables. Pearson correlation coefficients were calculated to identify significant relationships between the independent variables and the dependent variable. Regression Analysis was used to determine the extent to which the independent variables predict the dependent variable. Multiple regression analysis helped in understanding the relative contribution of each independent variable to the occurrence of psychological violence among social media users. Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS), a widely used software for statistical analysis in social science research. This software facilitated the efficient handling of data, enabling complex statistical analyses to be performed accurately and efficiently. The research philosophy underlying this study is a combination of positivism and interpretivism. Positivism emphasizes the use of objective measurements and statistical methods to test hypotheses and theories. This approach is reflected in the quantitative nature of the study and the use of standardized instruments for data collection. Interpretivism, on the other hand, acknowledges the subjective nature of human experiences and the need to understand the context and meaning behind those experiences. By integrating these philosophies, the study aims to provide a comprehensive understanding of how social media usage impacts psychological violence, incorporating both numerical data and contextual insights.

4. RESULTS AND DISCUSSION

The purpose of this study is to examine how social media use affects the psychological violence experienced by social media users in Sri Lanka. The results are derived from the responses gathered through a specially designed questionnaire and analyzed using SPSS software. The findings are categorized into demographic profile, reliability analysis, descriptive analysis, correlation analysis, and regression analysis.

The demographic profile of the sample reveals the gender and age distribution, as well as the number of social media platforms used by the respondents. Among the 387 respondents, 51.8% were female (205 respondents), and 48.2% were male (182 respondents) (see figure 2).
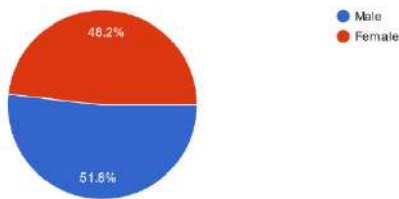
Figure 2. Gender Distribution of the Sample

The age distribution indicated that the largest group (42.4%) was between 25 and 31 years old, followed by those aged 19 to 24 years (31.8%) (see figure 3).
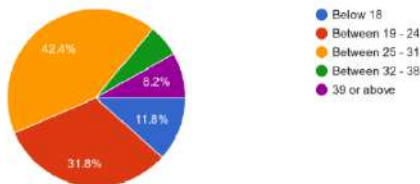
Figure 3. Age Distribution of the Sample

The majority of respondents used four or more social media platforms, with 47.1% using four platforms and 43.5% using five or more platforms.

Reliability analysis was conducted to examine the internal consistency of the constructs used to measure the key independent and dependent variables. Cronbach's alpha (α) values for all variables ranged from 0.688 to 0.913, indicating an acceptable level of reliability. The constructs measured included Highlight Reel, Social Currency, Fear of Missing Out (FOMO), Addiction, and Psychological Violence.

Descriptive analysis provides a clear understanding of the data and helps in data organization. The mean values of the variables ranged from 4.34 to 4.52, with Addiction having the highest mean value (4.52) and Highlight Reel the lowest (4.34). The standard deviation values ranged from 0.539 to 0.652, indicating the variability within the responses. The skewness values were negative, suggesting that the distribution of responses was skewed towards higher values on the Likert scale.

Correlation analysis was performed to examine the relationships between the independent variables (Highlight Reel, Social Currency, FOMO, and Addiction) and the dependent variable (Psychological Violence). The Pearson correlation coefficients indicated significant positive relationships between all independent variables and psychological violence. The correlation values were as follows: Highlight Reel (0.723), Social Currency (0.671), FOMO (0.732), and Addiction (0.735) (see table 1).

Table 1. Correlation Analysis

		HR	SC	FO MO	AD	Ps y
Highlight reel (HR)	Personal correlati on	1				

	Sig.(2-tailed)					
Social currency (SC)	Personal correlation	.772	1			
	Sig.(2-tailed)	.000				
Fear of missing out	Personal correlation	.690	.695	1		
	Sig.(2-tailed)	.000	.000			
Addiction (AD)	Personal correlation	.584	.518	.692	1	
	Sig.(2-tailed)	.000	.000	.000		
Psychological violence (Psy)	Personal correlation	.723	.671	.732	.735	1
	Sig.(2-tailed)	.000	.000	.000	.000	
**Correlation is significant at the 0.01 level (2-tailed)						

These significant correlations suggest that higher levels of these social media usage dimensions are associated with increased psychological violence among users.

Regression analysis was used to explain the contributions of the independent variables to the dependent variable and to indicate the overall fit of the model. The R^2 value was 0.701, implying that 70.1% of the variance in psychological violence could be explained by the independent variables. The coefficient table showed that all independent variables had significant positive impacts on psychological violence. The unstandardized coefficients (B) and their significance levels were as follows: Highlight Reel (B = 0.231, p < 0.000), Social Currency (B = 0.114, p < 0.004), FOMO (B = 0.167, p < 0.000), and Addiction (B = 0.369, p < 0.000). These results support the hypotheses that Highlight Reel, Social Currency, FOMO, and Addiction significantly influence psychological violence among social media users in Sri Lanka.

In summary, the analysis indicates that the dimensions of social media usage examined in this study (Highlight Reel, Social Currency, FOMO, and Addiction) are significantly associated with psychological violence. The findings align with previous research suggesting that social media can have negative psychological effects, particularly when users engage in social comparison, seek social validation, experience fear of missing out, or develop addictive behaviors.

The implications of these findings are profound, highlighting the need for awareness and interventions to mitigate the negative impacts of social media on mental health. Policymakers, educators, and mental health professionals should consider these dimensions when developing strategies to promote healthier social media use. Moreover, social media platforms should implement features and policies that reduce the emphasis on social comparison and validation, provide tools to manage FOMO, and address addictive behaviors to protect users' psychological well-being.

Future research should continue to explore these relationships in different cultural contexts and with longitudinal designs to understand the long-term effects of social media use on psychological violence. Additionally, qualitative studies could provide deeper insights into the personal experiences of social media users and the specific mechanisms through which social media contributes to psychological violence.

5. CONCLUSION

The research on the impact of social media usage on the psychological violence of social media users in Sri Lanka has provided valuable insights into the complex

relationship between social media sites and the psychological well-being of individuals. The study aimed to investigate the psychological effects of extensive social media engagement in the context of Sri Lanka, shedding light on the various factors contributing to psychological violence among users.

The findings of this research emphasize the multifaceted nature of social media's influence on psychological violence. It is evident that the common use of social media platforms has negative consequences, particularly pronounced in terms of psychological violence. The exposure to cyberbullying, online harassment, and the rapid dissemination of harmful content significantly contribute to the deterioration of mental health among social media users. Highlight Reel, Social Currency, Fear of Missing Out (FOMO), and Addiction were identified as significant predictors of psychological violence. Each of these dimensions of social media use was found to positively correlate with increased psychological violence, highlighting the detrimental impact of curated online personas, the pursuit of social validation, anxiety over missing out, and addictive behaviors.

Understanding that social media platforms are powerful tools that can shape public opinion and influence behavior is essential. Thus, efforts to mitigate psychological violence on these platforms should involve collaboration between various stakeholders, including government bodies, social media companies, mental health professionals, and community organizations. Creating awareness, developing digital literacy, and fostering a culture of empathy and respect online are crucial components of any comprehensive strategy aimed at mitigating the negative psychological impact of social media use.

Although this study has made a substantial contribution to our comprehension of the complex relationship between psychological violence in Sri Lanka and social media use, it also creates new opportunities for investigation. Future research should focus on particular demographic groups, categories of social media material, and the changing dynamics of online communication to provide more detailed insights. Researchers can help in creating targeted interventions and policies prioritizing the mental health of social media users in Sri Lanka and elsewhere by conducting further research on this dynamic geography.

6. RECOMMENDATIONS

Educational Campaigns: Implement educational efforts to raise awareness about the potential psychological effects of social media use. These campaigns should emphasize appropriate and conscientious social media use to reduce psychological violence. Educational initiatives can be integrated into school curriculums, community programs, and workplace training sessions.

Digital Literacy Programs: Encourage the incorporation of digital literacy initiatives into educational institutions and community centers. Modules on recognizing and responding to psychological violence on social media platforms should be included in these programs. Digital literacy can

empower users to navigate social media more responsibly and recognize harmful behaviors early on.

Government Regulation and Policies: Propose the creation and implementation of regulations and procedures addressing online psychological violence. Government agencies should collaborate with social media platforms to develop guidelines and impose penalties for harmful online behavior. Such policies can help create a safer online environment and hold perpetrators accountable.

Crisis Intervention Services: Establish crisis intervention services for those facing psychological violence on social media. Collaborations with mental health organizations can provide affected individuals with support and counseling. Crisis helplines, online support groups, and counseling services should be made readily available to assist victims of online psychological violence.

Community Support Programs: Develop community support programs that help social media users feel a sense of connection and resilience. Emphasize the importance of offline community engagement to balance online interactions. These programs can include workshops, support groups, and community events that promote healthy social connections and mental well-being.

Research and Monitoring: Continue research on the changing environment of social media and its impact on psychological well-being. Establish monitoring mechanisms in Sri Lanka to track the frequency and trends of psychological violence on social media. Regular reports and studies can help policymakers and stakeholders stay informed and develop timely interventions.

Parental and Educator Involvement: Encourage parental and educator participation in guiding and educating children who use social media. Workshops and resources for parents and educators can help them support their children and students in navigating social media challenges. Active involvement from parents and teachers can mitigate the risks associated with social media use among young people.

Further Research Directions: Conduct longitudinal studies to observe changes in social media usage trends and psychological violence over an extended period. Comparing the impact of social media on psychological violence in different countries or regions can highlight environmental and cultural differences. Investigate the influence of demographic variables such as age, gender, socioeconomic status, and educational attainment on the relationship between social media usage and psychological violence. Explore specific types of posts or content that are most likely to encourage psychological violence and assess various intervention strategies aimed at reducing the detrimental impact of social media on mental health. Utilize qualitative research techniques, such as focus groups and interviews, to complement quantitative data and provide deeper insights into the real-life experiences of social media users.

By exploring these new research methods, stakeholders can develop more comprehensive strategies to address the complex relationship between social media use and psychological violence, ultimately

guiding preventative and intervention measures that prioritize the mental health and well-being of social media users.

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ACKNOWLEDGMENT

Governance and Compliance of Autonomous Systems and Robotics: Ethical and Legal Frameworks for the Future

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ABSTRACT

The rapid integration of autonomous systems and robotics into sectors such as healthcare, transportation, and defense necessitates a thorough examination of governance frameworks. This study focuses on the legal, ethical, and regulatory challenges associated with these technologies. It explores issues of legal accountability and liability when autonomous systems cause harm, comparing different jurisdictional approaches to understanding how various legal systems handle these challenges. The ethical considerations of deploying autonomous technologies are examined, highlighting dilemmas across various sectors and the need for ethical guidelines to ensure responsible use. Safety and security standards are analyzed to identify gaps in existing regulations and to propose measures to ensure these technologies do not pose risks to public safety. Privacy implications, particularly regarding data protection laws, are scrutinized to understand compliance challenges and the potential impact on individual privacy rights. The study also investigates the role of international cooperation in achieving regulatory harmonization, recognizing that autonomous systems operate in a global context and require consistent regulations across borders. The impact of autonomous systems on employment, labor laws, and public policy is examined to understand how these technologies affect the workforce and what governance measures can be implemented to mitigate negative impacts. Furthermore, the research addresses the importance of transparency and explainability in autonomous systems, advocating for systems that are understandable and accountable to users

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and regulators. By providing a comprehensive overview of the governance of autonomous systems and robotics, this research aims to balance innovation with societal well-being, ensuring that the deployment of these technologies is both responsible and ethical. Through case studies and comparative analysis, this work contributes to the understanding of how best to govern autonomous systems in a way that maximizes their benefits while minimizing potential harms.

***Keywords* - Autonomous Systems Governance, Ethical AI Deployment, Regulatory Compliance**

1. INTRODUCTION

The integration of autonomous systems and robotics into various sectors, including healthcare, transportation, and defense, represents one of the most significant technological advancements of the 21st century. These technologies promise substantial benefits, from enhanced efficiency and safety to improved quality of life. However, their rapid adoption also raises complex legal, ethical, and regulatory challenges that necessitate a comprehensive governance framework. As autonomous systems gain greater autonomy and decision-making capabilities, the traditional legal and ethical paradigms are being tested, requiring novel approaches to ensure their responsible deployment.

The legal landscape surrounding autonomous systems is particularly intricate, as these technologies blur the lines of accountability and liability. Traditional legal frameworks are often ill-equipped to address

scenarios where autonomous systems cause harm, leading to significant uncertainties in attributing responsibility. Different jurisdictions have adopted varied approaches to tackle these challenges, reflecting the diverse legal traditions and regulatory priorities across the globe. This study aims to provide a comparative analysis of these approaches, identifying best practices and proposing a harmonized legal framework that can be adopted internationally.

Ethical considerations are equally paramount in the deployment of autonomous systems. These technologies introduce new ethical dilemmas, particularly concerning their decision-making processes and the potential impacts on human well-being. Ensuring that autonomous systems operate in a manner consistent with societal values requires the development of robust ethical guidelines. This research delves into the ethical implications across various sectors, advocating for a framework that prioritizes the responsible use of autonomous technologies.

Safety and security are critical aspects of governance in the context of autonomous systems. While these technologies offer significant safety improvements, their complexity and autonomy can also introduce new risks. This study examines existing safety and security standards, identifying gaps and proposing measures to enhance the regulatory landscape. Ensuring the safety of autonomous systems is essential to gain public trust and facilitate their widespread adoption.

Privacy implications are another critical concern, particularly in light of the vast

amounts of data autonomous systems collect and process. Compliance with data protection laws and safeguarding individual privacy rights are essential to maintaining public trust. This research scrutinizes the privacy challenges posed by autonomous systems, exploring the intersection of technology, law, and privacy to propose solutions that ensure robust data protection.

The global nature of autonomous systems necessitates international cooperation to achieve regulatory harmonization. Disparate regulations across borders can hinder the development and deployment of these technologies. This study investigates the role of international collaboration in creating consistent and effective governance frameworks, recognizing that a coordinated approach is crucial for the global integration of autonomous systems.

The impact of autonomous systems on employment and labor laws is another significant area of concern. These technologies have the potential to disrupt traditional employment patterns, necessitating new governance measures to mitigate negative impacts on the workforce. This research examines the implications for public policy and labor laws, proposing strategies to balance technological advancement with social equity.

Transparency and explainability in autonomous systems are essential for accountability and trust. As these systems become more complex, ensuring that their operations are understandable to users and regulators is critical. This study advocates for transparency measures that enhance the accountability of autonomous systems, contributing to their responsible governance.

By providing a comprehensive overview of the governance of autonomous systems and robotics, this research aims to balance innovation with societal well-being. Through case studies and comparative analysis, this work contributes to the understanding of how best to govern autonomous systems, maximizing their benefits while minimizing potential harms. This introduction sets the stage for an in-depth exploration of the legal, ethical, and regulatory challenges posed by autonomous systems, highlighting the need for a coordinated and responsible approach to their governance.

The research problem guiding this study is How can legal frameworks be adapted to ensure clear accountability and liability in the deployment of autonomous vehicles across different jurisdictions? This paper seeks to answer this question through a comparative analysis of legal systems in the U.S., EU, and Japan. By examining existing laws, such as the U.S. National Highway Traffic Safety Administration guidelines, the EU's Product Liability Directive (85/374/EEC), and Japan's Basic Act on the Advancement of Utilizing Public and Private Sector Data (Act No. 103 of 2016), the study aims to identify best practices and propose recommendations for harmonizing liability standards internationally.

2. CASE STUDIES

2.1 Case Study 1: Autonomous Vehicles in Transportation

Autonomous vehicles (AVs) represent a significant technological advancement in the transportation sector. Companies like

Waymo, Tesla, and Uber have pioneered the development and deployment of AVs, promising improved safety, reduced traffic congestion, and enhanced mobility. However, these benefits come with legal, ethical, and regulatory challenges that need thorough examination.

In March 2018, an Uber self-driving car struck and killed a pedestrian in Arizona, raising significant legal questions regarding liability and accountability. This incident highlighted the difficulty in determining fault in accidents involving AVs. While the car was in autonomous mode, there was a safety driver present, creating ambiguity about who should be held responsible: the manufacturer, the software developer, or the human operator.

Different jurisdictions have adopted various approaches to address these challenges. For example, the European Union (EU) emphasizes the precautionary principle, requiring extensive testing and safety certifications before AVs can be deployed. In contrast, the United States adopts a more flexible, innovation-friendly approach, with states like Arizona and California implementing their own regulatory frameworks. This case study compares these approaches to understand their effectiveness in addressing legal and regulatory challenges.

The ethical dilemmas associated with AVs often revolve around decision-making in critical situations. For instance, if an AV must choose between colliding with a pedestrian or swerving and risking the lives of its passengers, what ethical guidelines should it follow? These scenarios require a robust ethical framework to guide the programming of AV decision-making algorithms.

The Uber incident underscored the need for rigorous safety and security standards. This case study examines existing standards, such as the National Highway Traffic Safety Administration (NHTSA) guidelines in the U.S. and identifies gaps that need addressing to ensure AVs do not pose risks to public safety.

AVs collect vast amounts of data to operate effectively, raising privacy concerns. Compliance with data protection laws, such as the General Data Protection Regulation (GDPR) in the EU, is critical to safeguarding individual privacy rights. This case study explores the privacy implications of AVs and proposes measures to enhance data protection.

2.2 Case Study 2: Robotics in Healthcare

Robotics in healthcare, including surgical robots like the Da Vinci Surgical System and autonomous care robots, have transformed patient care. These technologies offer precision, efficiency, and the potential to perform complex procedures with minimal human intervention. However, they also present unique governance and compliance challenges.

One of the significant challenges in healthcare robotics is ensuring compliance with medical device regulations. The Da Vinci Surgical System, for example, is subject to rigorous testing and approval processes by regulatory bodies like the Food and Drug Administration (FDA) in the U.S. However, incidents of malfunction or user error raise questions about liability. In one

case, a patient sued the manufacturer after experiencing complications during a robotic surgery, highlighting the need for clear legal frameworks to address such issues.

The deployment of robots in healthcare raises ethical questions about patient consent, the role of human oversight, and the potential dehumanization of patient care. Ensuring that patients fully understand the risks and benefits of robotic surgery and maintaining a human touch in care are critical ethical considerations.

Healthcare robots must adhere to stringent safety and security standards to ensure patient safety. This case study examines the standards set by bodies like the FDA and the European Medicines Agency (EMA), identifying areas for improvement to prevent malfunctions and cybersecurity threats.

Robotic systems in healthcare handle sensitive patient data, necessitating robust data protection measures. Compliance with regulations like the Health Insurance Portability and Accountability Act (HIPAA) in the U.S. is crucial to protect patient privacy. This case study explores the privacy challenges and proposes measures to enhance data protection.

2.3 Case Study 3: Autonomous Weapons in Défense

Autonomous weapons, including drones and unmanned ground vehicles, represent a significant advancement in military technology. These systems can operate with minimal human intervention, offering strategic advantages in combat. However, their deployment raises profound legal, ethical, and regulatory questions.

The use of autonomous weapons is governed by international laws and treaties, such as the Geneva Conventions. However, the absence of clear regulations specifically addressing autonomous systems creates legal ambiguities. For instance, if an autonomous weapon mistakenly targets civilians, determining accountability becomes complex. This case study examines international approaches to regulating autonomous weapons, comparing frameworks from the United Nations (UN) and individual countries.

The ethical implications of autonomous weapons are significant, particularly concerning the delegation of life-and-death decisions to machines. Ensuring that these systems adhere to the principles of proportionality, distinction, and necessity is crucial to maintaining ethical standards in warfare. This case study explores these ethical dilemmas and proposes guidelines for the responsible use of autonomous weapons.

Autonomous weapons must adhere to strict safety and security standards to prevent accidental engagements and unauthorized use. This case study examines existing standards and identifies gaps that need addressing to ensure these systems operate safely and securely.

The deployment of autonomous weapons involves extensive surveillance and data collection, raising privacy concerns. Ensuring compliance with international data protection laws is critical to safeguarding privacy rights. This case study explores the privacy implications and proposes measures to enhance data protection.

By examining these case studies, this research provides a detailed understanding of the governance and compliance challenges associated with autonomous systems and robotics. Each case highlights the need for comprehensive legal, ethical, and regulatory frameworks to ensure the responsible and ethical deployment of these technologies.

3. COMPARATIVE LEGAL ANALYSIS

The rapid advancement of autonomous systems and robotics poses significant challenges to existing legal frameworks. As these technologies become increasingly integrated into various sectors, jurisdictions around the world are grappling with how to regulate them effectively. This comparative legal analysis examines how different legal systems address the governance and compliance of autonomous systems, focusing on key areas such as liability, accountability, and regulatory approaches. By comparing these approaches, we aim to identify best practices and propose recommendations for harmonizing legal standards internationally.

Liability and Accountability

In the United States, the legal framework for autonomous systems is still evolving. Liability issues are primarily addressed through tort law, which governs civil wrongs and damages. In cases involving autonomous vehicles (AVs), for instance, determining liability can be complex, as addressed under **49 U.S.C. Chapter 301 (Motor Vehicle Safety)** and state-level laws such as California's **Autonomous Vehicle Regulations (2018)**. Relevant case law,

such as **Nidia Zepeda v. Uber Technologies, Inc.**, highlights the challenges in attributing liability in AV accidents. The National Highway Traffic Safety Administration (NHTSA) provides guidelines for the testing and deployment of AVs, but state laws vary significantly. Some states, like California, have stringent regulations requiring detailed safety assessments, while others, like Arizona, have more relaxed policies to encourage innovation. In the event of an accident involving an AV, liability may be attributed to the manufacturer, the software developer, or the vehicle owner, depending on the circumstances. The "strict liability" principle, which holds manufacturers accountable for defects in their products, is often applied. However, the lack of uniform federal regulations creates inconsistencies and uncertainties in liability determinations.

The European Union (EU) adopts a more precautionary approach to regulating autonomous systems. The EU's General Data Protection Regulation (GDPR) and the forthcoming Artificial Intelligence Act set stringent standards for data protection and AI systems. Liability for autonomous systems in the EU is guided by the **Product Liability Directive (85/374/EEC, 1985)**, which holds manufacturers liable for defective products that cause harm. Additionally, the EU's regulatory framework emphasizes the precautionary principle, requiring thorough testing and risk assessments before autonomous systems can be deployed. This approach aims to mitigate risks and ensure safety, but it can also slow down innovation. The EU's emphasis on harmonized regulations across member states provides a more consistent legal

environment compared to the fragmented approach in the U.S.

Japan is a leader in robotics and has developed a unique legal framework to address the challenges posed by autonomous systems. The Japanese government has implemented the **Basic Act on the Advancement of Utilizing Public and Private Sector Data (Act No. 103 of 2016)**, which promotes the use of AI and robotics while ensuring data protection and security. Liability issues in Japan are addressed through a combination of product liability law and specific regulations for autonomous systems. The Japanese legal system emphasizes the importance of safety standards and certification processes, requiring manufacturers to comply with strict guidelines before deploying autonomous systems. This approach balances innovation with public safety, ensuring that autonomous technologies are reliable and secure.

3.1 Regulatory Approaches

3.1.1 Risk-Based Regulation

A common regulatory approach adopted by several jurisdictions is risk-based regulation, which tailors regulatory requirements to the level of risk posed by the autonomous system. For example, the UK's "Code of Practice for Automated Vehicle Trialling" outlines a risk-based framework for testing AVs, requiring developers to conduct risk assessments and implement appropriate safety measures. Risk-based regulation allows for flexibility and innovation while ensuring that higher-risk applications are subject to stricter oversight. This approach is particularly relevant for autonomous systems, where the potential consequences of failure can vary widely depending on the application.

3.2.2 Precautionary Principle

The precautionary principle, adopted by the EU, emphasizes the importance of preventing harm by requiring thorough testing and risk assessments before deploying autonomous systems. This approach prioritizes safety and aims to mitigate potential risks, but it can also create barriers to innovation by imposing stringent regulatory requirements. The precautionary principle is particularly relevant for high-stakes applications, such as healthcare and defence, where the potential consequences of failure are severe. However, finding the right balance between precaution and innovation remains a challenge.

3.3.3 Regulatory Sandboxes

Regulatory sandboxes provide a controlled environment for testing and developing autonomous systems under regulatory supervision. This approach, adopted by countries like the UK and Singapore, allows developers to experiment with new technologies while ensuring compliance with regulatory standards. Regulatory sandboxes offer a flexible and adaptive regulatory framework, encouraging innovation while managing risks. They provide valuable insights for regulators, helping to inform the development of permanent regulatory frameworks.

3.2 Ethical and Human Rights Considerations

3.2.1 Transparency and Explainability

Transparency and explainability are critical components of ethical governance for autonomous systems. Legal frameworks in the EU and Japan emphasize the importance of transparency, requiring developers to provide clear and understandable information about how autonomous systems operate. The EU's GDPR includes provisions for the "right to explanation," allowing individuals to understand how decisions made by automated systems affect them. This approach ensures accountability and builds public trust in autonomous technologies.

3.2.2 Human Oversight

Ensuring human oversight is another key ethical consideration in the governance of autonomous systems. The EU's AI Act proposes mandatory human oversight for high-risk AI applications, ensuring that human operators can intervene when necessary. Human oversight is essential for maintaining accountability and preventing harm, particularly in critical applications like healthcare and defense. Legal frameworks that mandate human oversight help to balance the benefits of automation with the need for ethical governance.

This comparative legal analysis highlights the diverse approaches taken by different jurisdictions to regulate autonomous systems and robotics. While the U.S. adopts a more flexible, innovation-friendly approach, the EU emphasizes precaution and safety. Japan's balanced approach integrates strict safety standards with a commitment to innovation. Risk-based regulation, the precautionary principle, and regulatory sandboxes offer valuable frameworks for managing the complexities of autonomous systems. By examining these approaches, we can identify best practices and propose recommendations for harmonizing legal standards internationally. Ensuring a consistent and robust legal framework for autonomous systems is essential for maximizing their benefits while minimizing potential harms, ultimately contributing to a responsible and ethical deployment of these transformative technologies.

4. ETHICAL FRAMEWORKS AND GUIDELINES

The deployment of autonomous systems and robotics across various sectors has raised numerous ethical concerns. These concerns revolve around the decision-making capabilities of these systems, their impact on human well-being, and the potential for unintended consequences. Establishing ethical frameworks and guidelines is essential to ensure that these technologies are developed and used responsibly. This section explores the key ethical considerations associated with autonomous systems and proposes comprehensive guidelines to address these issues.

Autonomous systems are designed to make decisions with minimal human intervention, which raises questions about how these decisions are made and the ethical principles guiding them. For instance, in the case of autonomous vehicles (AVs), ethical dilemmas arise when an AV must choose between harming different individuals in an

unavoidable accident. Determining accountability for the actions of autonomous systems is another complex ethical issue. When an autonomous system causes harm, it is challenging to attribute responsibility to the manufacturer, the software developer, or the user. Clear guidelines are needed to ensure accountability and responsibility in such cases. Transparency and explainability are crucial for building trust in autonomous systems. Users and stakeholders need to understand how these systems operate and make decisions. Ensuring transparency can help prevent misuse and build public trust. Autonomous systems often collect and process vast amounts of data, raising privacy concerns. Ensuring that these systems comply with data protection laws and respect individual privacy rights is essential to prevent misuse of personal information. The safety and security of autonomous systems are paramount. These systems must be designed to prevent harm and ensure the security of the data they handle. Robust safety and security measures are necessary to protect users and prevent malicious attacks. Autonomous systems must also operate fairly and without discrimination. Ensuring that these systems do not perpetuate biases or discriminate against individuals based on race, gender, or other characteristics is essential for ethical governance. Furthermore, the deployment of autonomous systems should respect human dignity and prioritize human welfare, enhancing rather than diminishing the quality of human life.

Deontological ethics focuses on adherence to rules and duties. In the context of autonomous systems, this framework emphasizes the importance of following ethical guidelines and principles, regardless of the outcomes. For example, an autonomous system should never violate user privacy, even if doing so could lead to beneficial outcomes. Utilitarian ethics evaluates the ethicality of actions based on their consequences. This framework can be applied to autonomous systems by ensuring that their actions result in the greatest good for the greatest number of people. For instance, AVs can be programmed to minimize overall harm in accident scenarios. Virtue ethics emphasizes the importance of moral character and virtues. In the context of autonomous systems, this framework focuses on designing systems that embody virtues such as honesty, fairness, and compassion. For example, healthcare robots should be designed to provide compassionate care to patients.

Autonomous systems should be designed and developed with ethical considerations at the forefront. Ethical principles must be incorporated into the design and development process, and ethical impact assessments should be conducted to identify potential ethical issues. Engaging with stakeholders, including ethicists, during the design phase is crucial. These systems should also be transparent and explainable, ensuring that users can understand how the system operates and makes decisions. Clear documentation and user interfaces that explain the system's functions should be provided, along with mechanisms for users to query and challenge decisions made by the system.

There should be clear accountability and responsibility for the actions of autonomous systems. The roles and responsibilities of all

parties involved in the development and deployment of the system must be defined and documented. Establishing clear legal frameworks to address liability and accountability is essential, along with implementing monitoring and auditing mechanisms to ensure compliance with ethical guidelines. Autonomous systems should protect user privacy and comply with data protection laws. Robust data protection measures must be implemented to safeguard personal information, and compliance with relevant data protection regulations, such as the GDPR, should be ensured. Providing users with control over their data and transparency about data collection and use is also important.

Safety and security should be prioritized in the design of autonomous systems. Systems must be designed to minimize risks and prevent harm to users, and robust security measures should be implemented to protect against cyber threats. Regular testing and updates are necessary to address vulnerabilities and ensure safety. Autonomous systems should operate fairly and without discrimination. Bias assessments should be conducted to identify and mitigate potential biases in the system, and it should be ensured that the system's operations do not discriminate against individuals based on race, gender, or other characteristics. Regular reviews and updates are essential to ensure fairness.

Human oversight and intervention must be possible with autonomous systems. Systems should be designed to enable human operators to intervene and override decisions when necessary. Providing training and support for human operators is crucial to ensure effective oversight, along with implementing fail-safe mechanisms to ensure that systems can be safely shut down in emergencies.

Establishing ethical frameworks and guidelines is crucial for the responsible development and deployment of autonomous systems and robotics. By addressing key ethical considerations such as autonomy, accountability, transparency, privacy, safety, fairness, and human dignity, these guidelines ensure that these technologies are used in ways that benefit society while minimizing potential harms. Adopting and implementing these ethical frameworks can help build public trust and ensure that autonomous systems contribute positively to human well-being.

5. IMPACT ON EMPLOYMENT AND LABOR LAWS

The integration of autonomous systems and robotics across various sectors is fundamentally reshaping the landscape of employment and Labor laws. These technologies, ranging from autonomous vehicles to robotic process automation, have the potential to both displace existing jobs and create new ones. For instance, roles in transportation and administration may see reductions due to automation, while opportunities in technology development and specialized services could expand. This shift poses challenges such as increased unemployment, income disparity, and the need for widespread reskilling and upskilling initiatives to align with emerging job demands.

Beyond job displacement, the nature of work itself is evolving as autonomous systems

become more prevalent. Workers are increasingly required to collaborate with and manage these technologies, necessitating new skill sets and adjustments in workplace practices. This evolution prompts a revaluation of traditional Labor laws, particularly in terms of worker classification, rights, and safety regulations. The classification of workers—whether as employees or independent contractors—influences their access to benefits like minimum wage protections, healthcare, and job security. This issue becomes more complex with the rise of the gig economy and freelance work, where clear definitions and protections are crucial to safeguard workers' rights.

Safety regulations also require adaptation to account for the unique risks introduced by autonomous systems, such as cybersecurity vulnerabilities and technical failures. While these technologies can enhance workplace safety by assuming hazardous tasks, they simultaneously introduce new risks that must be mitigated through updated regulatory frameworks. Furthermore, the impact on collective bargaining and worker representation calls for innovative approaches to ensure that Labor unions and other advocacy groups effectively advocate for workers in an increasingly automated environment.

Proposed governance measures include inclusive policy development that engages stakeholders across industries to craft regulations that balance technological advancement with worker protections. Enhanced Labor protections are essential to safeguard workers' rights in an evolving Labor market, requiring updated laws that address fair worker classification, extended protections for gig workers, and standards for workplace safety in automated environments. Investment in education and training initiatives is critical to equip workers with the skills needed to thrive alongside autonomous systems, supporting transitions in employment and facilitating adaptation to new job roles.

Ultimately, promoting fair work practices and supporting workers during periods of transition are integral to creating a resilient Labor market that harnesses the benefits of autonomous systems while mitigating potential drawbacks. By addressing these issues comprehensively, governments and organizations can foster a Labor environment that is equitable, adaptable, and responsive to the challenges and opportunities presented by advancing technologies.

6. INTERNATIONAL COOPERATION AND REGULATORY HARMONIZATION

International cooperation and regulatory harmonization are crucial in the governance of autonomous systems and robotics, given their global impact and cross-border operations. As these technologies permeate various sectors, from healthcare to transportation, and from manufacturing to defence, the need for consistent regulatory frameworks becomes evident. Harmonizing regulations internationally can streamline compliance for companies operating in multiple jurisdictions, reduce barriers to market entry, and facilitate innovation by providing clear and unified standards.

The benefits of international regulatory harmonization extend beyond regulatory efficiency. It promotes interoperability and compatibility among autonomous systems, enabling seamless operation across different regions. This interoperability is particularly critical for sectors such as aviation, where consistent standards ensure safe and efficient air travel globally. Moreover, harmonized regulations enhance consumer protection and confidence by ensuring that products and services meet uniform safety, security, and ethical standards regardless of where they are deployed or manufactured.

In addition to operational benefits, international regulatory harmonization fosters collaboration among nations in addressing common challenges posed by autonomous systems. Issues such as liability frameworks, data protection, and ethical guidelines can be approached collaboratively to develop best practices that reflect diverse societal and cultural perspectives while upholding shared values.

However, achieving international regulatory harmonization poses significant challenges. Variations in legal systems, cultural differences, and differing levels of technological adoption among countries can complicate efforts to create unified standards. Moreover, geopolitical tensions and national interests may influence regulatory agendas, leading to divergent approaches to governance.

Despite these challenges, initiatives such as international treaties, agreements, and regulatory frameworks (e.g., the GDPR in the European Union) demonstrate progress towards harmonization. These efforts emphasize the importance of dialogue, mutual understanding, and consensus-building among nations to develop flexible yet robust regulatory frameworks that accommodate technological advancements while safeguarding public interests globally.

In conclusion, international cooperation and regulatory harmonization are essential for addressing the complexities of governing autonomous systems and robotics on a global scale. By fostering collaboration, promoting interoperability, and ensuring consistent standards, harmonized regulations can unlock the full potential of these technologies while mitigating risks and enhancing societal benefits worldwide. As technological advancements continue to evolve, ongoing dialogue and cooperation among nations will be crucial in adapting regulatory frameworks to meet the challenges and opportunities of the future.

7. DISCUSSION

In synthesizing the findings of this research on governance and compliance of autonomous systems and robotics, several key themes emerge that address the overarching research questions and objectives. The rapid integration of autonomous technologies across diverse sectors such as healthcare, transportation, and defence necessitates robust governance frameworks that can effectively manage the legal, ethical, and regulatory challenges associated with their deployment.

Firstly, the study underscores the complexity of legal accountability and liability when autonomous systems cause harm. Comparative analysis reveals varying jurisdictional approaches, highlighting the need for harmonized international standards

to ensure consistent legal outcomes and fair treatment across borders. This discussion emphasizes the importance of clarity in defining responsibilities among stakeholders, including manufacturers, developers, and users, to mitigate risks and enhance legal certainty.

Ethical considerations emerge as a critical focal point, examining dilemmas in deploying autonomous technologies responsibly. The study identifies ethical frameworks such as deontological, utilitarian, and virtue ethics as guiding principles for ensuring that these technologies uphold principles of fairness, transparency, and respect for human dignity. This discussion stresses the imperative of developing comprehensive ethical guidelines that address sector-specific challenges and promote ethical decision-making in autonomous system design and deployment.

Safety and security standards also feature prominently in the synthesis, with a focus on identifying gaps in existing regulations and proposing measures to mitigate risks to public safety. Issues of cybersecurity, data protection, and system reliability are highlighted as paramount concerns requiring stringent regulatory oversight and technological safeguards. The synthesis emphasizes the importance of proactive measures in enhancing the resilience of autonomous systems against potential threats while ensuring they operate safely and securely in diverse operational environments.

Moreover, the impact of autonomous systems on employment and Labor laws emerges as a significant area of concern. Analysis reveals both the potential for job displacement and the creation of new job opportunities, necessitating adaptive Labor laws that protect workers' rights, ensure fair employment practices, and support reskilling initiatives. The discussion underscores the role of governance in fostering a balanced approach that maximizes the benefits of automation while mitigating its socio-economic impacts on the workforce.

Lastly, the synthesis explores the imperative for international cooperation and regulatory harmonization in governing autonomous systems effectively on a global scale. It underscores the benefits of harmonized standards in promoting interoperability, enhancing consumer protection, and facilitating innovation across international borders. Challenges such as cultural differences, geopolitical tensions, and technological disparities are acknowledged, emphasizing the need for collaborative efforts among nations to develop inclusive regulatory frameworks that accommodate diverse societal needs and aspirations.

In conclusion, this synthesis provides a comprehensive overview of the governance challenges and opportunities associated with autonomous systems and robotics. By addressing legal, ethical, regulatory, and socio-economic dimensions, the study contributes to a deeper understanding of how best to govern these transformative technologies to ensure they contribute positively to society while minimizing potential risks. Ongoing dialogue, research, and international cooperation will be essential in shaping responsive governance frameworks that navigate the complexities

of a rapidly evolving technological landscape.

8. CONCLSUION

In conclusion, this research underscores the critical importance of developing comprehensive governance frameworks for autonomous systems and robotics. The synthesis of findings has highlighted significant challenges and opportunities across legal, ethical, regulatory, and socio-economic dimensions. Key insights include the necessity for clear legal accountability and liability frameworks to address harm caused by autonomous systems, the development of robust ethical guidelines to ensure responsible deployment, and the enhancement of safety and security standards to mitigate risks effectively. Moreover, the study emphasizes the need for adaptive Labor laws that protect workers while fostering innovation and job creation in an increasingly automated economy. International cooperation and regulatory harmonization emerge as pivotal in promoting interoperability, enhancing consumer trust, and addressing global challenges collaboratively. Moving forward, continuous dialogue and collaboration among stakeholders will be essential in shaping governance frameworks that balance technological advancement with societal well-being, ensuring that autonomous systems contribute positively to our collective future.

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Role of Monitoring & Evaluation (M & E) Approach in Good Governance Practices in Local Government Sector of Sri Lanka Special Reference to Sri Jayewardenepura Kotte MC

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ABSTRACT

The purpose of this research is to explore the role of Monitoring & Evaluation (M&E) in fostering good governance within the local government sector of Sri Lanka, specifically focusing on the Sri Jayewardenepura Kotte Municipal Council. This study investigates how M&E influences accountability, management decisions, and organizational learning, drawing insights from both qualitative and quantitative data. The research employed a mixed-methods approach. Quantitative data was collected from a sample size of 63 respondents through structured questionnaires utilizing a Likert-scale. Qualitative data was gathered via semi-structured interviews with 5 top management staff members, selected through purposive sampling. Correlation analysis was applied to the quantitative data, while descriptive analysis was conducted for the qualitative analysis. Key findings demonstrate the significant impact of M&E on enhancing accountability, managerial decision-making, and organizational learning, thereby promoting good governance. The study identified that M&E practices, although present, vary in their implementation across different departments, necessitating standardized approaches and technological advancements. Additionally, the research highlighted the positive correlation between M&E practices and good governance, with significant relationships observed between M&E accountability, management

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decisions, organizational learning, and governance outcomes. The implications of this research suggest that for improved governance, local government institutions should invest in standardized M&E practices, technological upgrades, and strategic accountability standards. Addressing learning gaps and implementation challenges through adaptable strategies and collaborative knowledge-sharing is essential for continual improvement. Future research should focus on longitudinal studies to understand the evolution of M&E practices and their long-term impact on governance. Comparative analyses across different regions and countries can provide further insights into optimal practices and contextual variations. This study contributes to scholarly knowledge and provides practical recommendations for policymakers, practitioners, and officials in the local government sector.

Keywords - **Monitoring & Evaluation (M&E), Good Governance, Accountability, Management Decisions, Organizational Learning, Local Government.**

1. INTRODUCTION

This research delves into the vital role of Monitoring & Evaluation (M&E) in fostering Good Governance within Sri Jayewardenepura Kotte Municipal Council, exploring the transformative impact of modernizing local governance amidst technological, political, and sociological shifts. Emphasizing the critical link between effective local government structures and societal development, it addresses the necessity to revamp outdated institutional practices hindering democratic and socio-economic advancement in many Third World nations (Gamlath, 2017).

According to OECD, good governance serves to achieve objectives rather than an end itself. Establishing accountable frameworks and institutions is pivotal for fostering equitable, participative societies and ensuring the security and success of nations (Organization of Economic Cooperation and Development (OECD), 2018). Sound public governance aids in transitioning from isolated policymaking to integrated strategies, aligning short- and long-term interests for sustainable development (Organization of Economic Cooperation and Development (OECD), 2019).

There are eight key traits of good governance. It adheres to the rule of law, participative, consensus-oriented, accountable, transparent, responsive, effective, and efficient. It ensures that corruption is kept to a minimum, minorities' opinions are taken into consideration, and the opinions of those who are the most disadvantaged members of society are considered during the process of making decisions. Additionally,

it responds to the requirements of society, both now and in futuregenerations (United Nations Economic and Social Commission for Asia and the Pacific, 2009). According to Lobe Ndoumbe Director OSGE, (2014), "good governance is probably one of the vital aspects of alleviating poverty and encouraging prosperity." National governance, as defined broadly by the United Nations. Department of Economic and Social Affairs., (2016), is "the exercise of economic, political, and administrative authority to manage a country's affairs at all levels." Consequently, according to United Nations. Department of Economic and Social Affairs., (2016), good governance entails "the rule of law, effective institutions, transparency and accountability in managing of government affairs, a commitment to the rights of humans, and theinvolvement of everybody in society in decisions which influence their everyday lives." International organizations including the International Monetary Fund (IMF) have also investigated the issue of good governance, examining the issues of transparency and accountability (United Nations. Department of Economic and Social Affairs., 2016).

The initial point for interaction between an individual and a government agency is frequently localgovernment. As a result, the argument that local government is the one closest to the people (Thornhill, 2008). Therefore, given the current urbanization tendencies, it is essential to give special consideration to the local government system and its supporting administrative structures. The expectations of a non-racial society, completely split by the apartheid policy of the previous administration, required the newly elected democratic government to overhaul the local government structure (Thornhill, 2008). The local level of government was given the duty of ensuring that everyone had access to essential services, and MCs, UCs & PSs were charged with fulfilling this duty (Nelson, 2016).

The fundamental basis of democracy and progress in any given nation is the local government. The worldwide trend in local government has drastically changed and local institutional systems all over the globe have practically embraced the concepts of good governance. Sri Lanka's local government structure needs to be modified to adhere to the global "good governance" movement. The democratic political culture of a given society as an entire is shaped and defined substantiallyby

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the universal nature of local governance. The overarching goal of local government is to implement good governance principles in order to preserve the Millennium Development Goals. The democratic nation of Sri Lanka has long maintained its own distinct local government structure. Improving democratic procedures through the adoption of global trends and providing prompt, high-quality services for the entirety of the population's social welfare were two of the primary goals of this local government system. However, it is discovered that the majority of local government organizations in Sri Lanka do not apply good governance concepts to their institutional procedures concerning services (Gamlath, 2015).

The IMF and World Bank supported reforms that were implemented in the 1970s and 1980s with the goal of enhancing the public sector's performance and efficiency, but these reforms were neverput into reality and ultimately served as a breeding ground for nepotism, corruption, and rent- seeking (Samaratunge & Pillay, 2011) (De Alwis, 2013).

According to Zall et al., (2004), over the years, the requirement to institutionalize M&E with the management of the public sector put more pressure on governments

as well as organizations surrounding around the globe to be more receptive to requires for good governance, accountability, and transparency, greater development effectiveness, and delivery of tangible outcomes from stakeholders both inside and outside the organization.

Stufflebeam et al., (2000) said M&E has undergone stages of evolution and he described seven development periods. He said "the first period prior to 1900, was called age of reform; the secondfrom 1900 until 1930 was called the age of efficiency; the third from 1930 to 1945 was called the Tylerian age; the fourth from 1946 to about 1957 was called the age of innocence; the fifth, from 1958 to 1972, the age of development; the sixth, from 1973 to 1983, the age of professionalization;and seventh, from 1983 to 2000, the age of expansion and integration" (Stufflebeam et al., 2000). It must be emphasized that other evaluation methodologies have arisen during this period, especially since the 1930s. Objectives-oriented, adversary-oriented, management-oriented, expertise-oriented, customer-oriented, and participant-oriented are the five types into which Fitzpatrick et al., (2011) divided the various methodologies.

Around four thousand years ago, evaluation was employed in China to evaluate government programs. However,

it wasn't until the post-war era that evaluation became an independent area of practice for professionals. The defining of objectives for the program and the development of a framework of indicators of achievement has received emphasis in nations like Brazil (May et al., 2000). The local realm of government is governed by a constitutional and legislative framework that attempts to promote good governance and monitor and evaluate programs and procedures to achieve efficient and effective service delivery (Nelson, 2016). M&E are essential for evaluating the success of government service delivery, considering both intended and unintended consequences. Program evaluation has become more common in countries that are both developed and developing due to pressure from individuals and civil parties (Auriacombe, 2018; F. Cloete, 2018; Sithomola, 2018).

Others, like Colombia, have integrated this via a program of meticulous evaluations of impact. Others, notably Australia, the US, and the UK, have emphasized the use of a wider range of M&E methods and tools, which include performance indicators, fast assessments, impact assessments, as well as auditing (Mackay, 2006).

While some nations have a disjointed and incoherent array of distinct departmental systems for monitoring, certain nations have been successful in developing a whole-of-government monitoring and evaluation (M&E) system (Mackay, 2006). Naidoo, (2011) asserts that M&E entered Africa quite recently and that it mostly developed because of studies of the method being used in other nations. M&E has mainly entered Africa via donor programs, and it has been associated with the importation of northern-based concepts and practices.

Monitoring is the "continuous assessment of the activities, social processes, realities and performance during the life of the program or project to improve the organization's effectiveness and efficiency in realizing goals" (Bengnwi, 2004, p.45). A "constant cycle of data collection and analysis, where information is used to bolster and sustain successful strategies during the subsequent stage of informed decision-making" is a further characteristic of M&E (Bengnwi, 2004, P.45). According to Donna & Pauline, (2009) "evaluation is a systematic application of social reproduces, methods to assess the strengths and weaknesses of social interventions, including programs, policies, personnel, products and organization" (p.170). Evaluation explains as a "involving the measurement and analysis of all factors that may contribute to a policy's success or failure, along with the careful design of

research to isolate the policy variable from other factors" (Innes & Booher, 1999).

The Sri Lankan government has always acknowledged the crucial role that M&E plays. One of the first nations to create an e-PMS, or electronic project monitoring system, to monitor projects being carried out across all ministries was Sri Lanka (Agrawal et al., 2017). A key component of that setup was a home-made electronic system. It was created in the former Ministry of Plan Implementation to monitor the outcomes of all development projects and programs, as well as both the monetary and physical advancement of adoption. The system may produce project information by sector, government, and donor. The current system has now been superseded by a new Integrated National Development Information System by the Department of Project Management and Monitoring (DPMM), which has the responsibility for M&E (Agrawal et al., 2017).

M&E and good governance work in harmony. M&E involves periodic evaluation of performance,drawing lessons from mistakes, and enhancing outputs, outcomes, and impacts (Agrawal et al., 2017). Good governance participation and responsiveness also tend to raise the demand for M&E.Endorsement of a clear national policy that supports M&E in all its

facets, including the growth ofevaluation capability, socially equitable and gender-responsive components, including the sustainability of evaluation, would additionally create a conducive atmosphere for M&E (Agrawal et al., 2017). M&E serves as a "reality check" tool and produces evidence-based lessons to the future. Good governance paves the way for beneficial M&E systems to continue operating and improve (Agrawal et al., 2017).

The complexity of Sri Lanka's multi-tiered governance system has led to crises in administration, fostering corruption and eroding public trust. Low scores on indices measuring corruption and declining faith in the public sector highlight the pressing need for improved governance. Sextortion, a concerning form of corruption, further underscores the systemic issues. The inadequacy of the Monitoring and Evaluation (M&E) system exacerbates governance challenges,hindering effective reforms. The research aims to address these deficiencies by investigating the role of M&E in enhancing good governance within Sri Lanka's local government context. Key supplementary inquiries will explore how M&E accountability, decision-making, and organizational learning contribute to fostering good governance.

The objective of this research is to examine the role of Monitoring and Evaluation (M&E) in enhancing good governance within Sri Lanka's local government sector, with a particular focus on the Sri Jayewardenepura Kotte Municipal Council. Specifically, this study seeks to assess how M&E practices influence accountability, inform management decision-making, and promote organizational learning in the context of local governance. It contributes to scholarly knowledge and informs policymakers, practitioners, and officials. This research demonstrates theimportance of Monitoring & Evaluation approach, in order to improve good governance in Sri Lanka's Local Government sector and so far, no research study has been done in this regard in SriLanka. The research seeks to facilitate the adoption of M&E practices, enhance governance aligning with global standards, and advance local governance structures and strategies. The research gap in this study is that, despite the acknowledged importance of M&E in promoting good governance, there is limited empirical evidence on its impact specifically within Sri Lanka's local government sector, particularly in the Sri Jayewardenepura Kotte Municipal Council context.

2. METHODOLOGY

The research study focuses on the Sri Jayewardenepura Kotte Municipal Council, using a mixed-methods approach to collect data from both qualitative and quantitative techniques. Quantitative data was collected through Likert-Scale questionnaires from top and middle-level management staff, while qualitative data was collected through semi-structured interviews with top management staff. The study sample includes officials from municipalities who conduct M&E andgood governance operations within their units. The Likert-scale questionnaire was filled with 63 respondents, which was the sample of the research study, among 75 of target population. The sample was selected by adopting a purposive sampling method. Qualitative data was collected through semi-structured interviews with selected staff (top management) of Sri Jayewardenepura Kotte MC by conducting face-to-face interviews for about 30-45 minutes. This semi structured interview was done by 5 interviews through purposive sampling method among top level management staff. Quantitative analysis was done by the SPSS application using correlation testing & Qualitative analysis was done by descriptive analysis obtained from interviews and documentary analysis obtained from secondary data.

The research used interviews with professionals and structured surveys, while secondary data was obtained through internet inquiries and municipal records. The approach was consistent with its qualitative objectives, using three research tools: semi-structured interviews, analysis of documents, and secondary data evaluation for significant indicators. Interviews were targeted at obtaining comprehensive opinions and viewpoints from senior municipal officials regarding the application and implementation of M&E and good governance. The secondary data analysis will determine if M&E supports good governance in municipalities. All data was analyzed, evaluated,and combined in accordance with the comparative research technique. The study aims to provide insights into the effectiveness of M&E in promoting good governance in municipalities.

According to the research, good governance is a typical outcome, whereas M&E is an approach to get the typical output. The research focused only on the role of M&E of accountability, decisions made by management, and organizational learning as good governance contributors, even if M&Esolely could not encourage good governance because there are other elements that are crucial to good governance.

Figure 1: Research Model
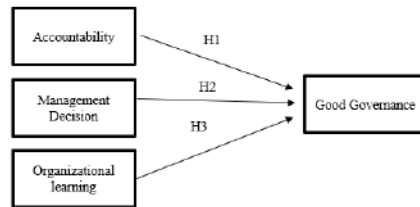
Source: Adapted from (The OECD Development Assistant Committee (DAC), 2011) (Naidoo, 2011) and modified by (Ojok & Basheka, 2016).

According to Ojok & Basheka, (2016), they measured that the following hypothesis has positive relationship,

H1: M&E Accountability role and good governance has a positive relationship.

H2: M&E Management's decisions and good governance have a positive relationship.

H3: M&E organization learning and good governance has a positive relationship.

Hence, based on the above hypothesis of Albusaidi, (2018) and Ojok & Basheka, (2016), in this research also applied those mentioned hypothesis which have positive relationship. This study operationalizes variables to examine M&E's impact on good governance in Sri Lanka's local government. Independent

variables include M&E accountability, management decisions, and organizational learning, while good governance, measured through transparency, effectiveness, and efficiency, serves as the dependent variable. The research aims to elucidate how these M&E facets contribute to fostering better governance practices at the local level.

3. RESULTS & DISCUSSION

The research on Sri Jayewardenepura Kotte Municipal Council achieved a full response rate, ensuring comprehensive insights from both top and middle-level management. This engagement is vital for holistic understanding and strategic decision-making within the administrative core.

The demographic profile of respondents from the Sri Jayewardenepura Kotte Municipal Council,including management levels, gender, age, education, and tenure, offers essential insights. This data aids in assessing sample representation, ensuring accuracy and relevance in drawing conclusions for the broader organizational population. The breakdown of respondent management levels in the Sri Jayewardenepura Kotte Municipal Council study reveals a predominant presence of middle management, comprising 81% of

participants, alongside 19% from top management. Additionally, the departmental distribution showcases a notable emphasis on Engineering, reflecting a strong focus on infrastructure and development initiatives with 24 individuals. Conversely, the Planning, Finance, and Health departments exhibit lower personnel counts, indicating potential areas for enhanced Monitoring and Evaluation efforts to strengthen governance within these critical sectors, which are fundamental to the council's functions.

The study's participant breakdown by gender showcases a balanced representation, with 48% female and 52% male respondents among the 63 employees interviewed. This gender parity is significant as it offers a well-rounded perspective on governance within the Sri JayewardenepuraKotte Municipal Council. The relatively equal distribution ensures comprehensive insights into governance practices, allowing for a holistic understanding of diverse perspectives. This balance in the respondents' pool contributes to a more inclusive and representative analysis of local governance dynamics and considerations within the council's operations. The age distribution among respondents in the study highlights a diverse range of perspectives, with

significant representation in the 30-45 age bracket indicating active engagement in governance matters. The 46-60 age group, representing 33% of respondents, holds importance due to its productivity and potential for strengthening Monitoring & Evaluation implementation within the Sri Jayewardenepura Kotte Municipal Council.

The educational backgrounds of respondents in the Sri Jayewardenepura Kotte Municipal Council study reveal a spectrum of qualifications, with a majority holding GCE Advanced Level certifications, highlighting foundational knowledge. Diplomas held by 19 participants offer practical insights, while smaller groups with Degrees and master's present nuanced expertise. This diversity allows for a comprehensive analysis of M&E's role, incorporating varied perspectives from foundational understanding to specialized insights. Similarly, the tenure analysis illustrates a diverse range of experience levels, with a sizable mid-level group (4-6 years), a seasoned segment (7+ years), and a significant influx of newer members (1-3 years), offering a broad range of experiences for evaluating M&E's impact on governance within the council.

3.1 Quantitative Analysis

Sample adequacy analysis is a statistical method that uncovers underlying connections among observed variables, simplifying data by identifying common factors that explain their correlations. The Kaiser-Meyer-Olkin (KMO) test assesses whether the sample size is suitable for factor analysis by gauging the shared variance among variables. A higher KMO value, closer to 1, suggests stronger correlations among variables, indicating better suitability for factor analysis. Factor analysis examined variables with KMO values > 0.60, indicating sufficient shared variance for factor interpretation. When items align strongly, indicating a single component per variable, over 50% of factor variance is explained by item variance, affirming factor definition. This underscores factor analysis' utility across datasets.

The normal distribution holds a paramount position in statistics, often serving as a fundamental assumption in various analytical methods. However, when dealing with non-normally distributed data, adjustments become essential. Assessing normality involves both numerical and graphical approaches. The Shapiro-Wilk test, a mathematical tool, examines the normality of a dataset by generating a significant value.

Researchers consider this value to determine whether the data significantly deviate from a normal distribution. If the significance value falls below a predetermined threshold (often 0.05), it indicates a departure from normality, prompting the needfor transformations or alternate statistical approaches to ensure the validity of subsequent analyses.

Normal distribution is crucial in statistics, but non-normally distributed data requires adjustments. The Shapiro Wilk test assesses normality using a significance value. If it falls belowa threshold (often 0.05), it suggests a departure from normality, necessitating transformations or alternative statistical methods. As per the above histograms, the Shapiro-Wilk test of normality is

0.000 and it is greater than 0.05 confident level and it can be concluded that the data set is normallydistributed.

Hypothesis testing

Correlation coefficients in statistical analysis measure the strength and direction of relationships between variables. They range from -1 to +1, with positive coefficients indicating direct relationships, negative coefficients indicating inverse relationships, and zero coefficients indicating no linear relationship.

Hypothesis 01 - M&E Accountability role encourages good governance.

According to the Person Correlation analysis the sig value is, 0.000 and the value less than (P<0.05), Hence the relationship between M&E Accountability role and good governance is significant. Also, the correlation coefficient is 0.486, shows that there is a weak positive relation with M&E Accountability role and good governance.

Hypothesis 02 - M&E Management's decisions role encourages good governance.

According to the Person Correlation analysis the sig value is, 0.000 and the value less than (P<0.05), Hence the relationship between M&E Management's decisions and good governance isignificant. Also, the correlation coefficient is 0.619, shows that there is a moderate positive relation with M&E Management's decisions and good governance.

Hypothesis 03 - M&E organization learning role encourages good governance.

According to the Person Correlation analysis the sig value is, 0.000 and the value less than (P<0.05), Hence the relationship between M&E organization learning and good governance is significant. Also, the correlation coefficient is 0.557, shows that there is a moderate positive relation with M&E organization learning and good governance.

Table 1. Corelations

		ACC	MD	OL	C	G
ACC	Pearson Correlation	1	.571**	.351**	.344**	**.486****
	Sig. (2-tailed)		0	0.005	0.006	**0**
	N	63	63	63	63	**63**
MD	Pearson Correlation	.571**	1	.523**	.324**	**.619****
	Sig. (2-tailed)	0		0	0.01	**0**
	N	63	63	63	63	**63**
OL	Pearson Correlation	.351**	.523**	1	0.221	**.557****
	Sig. (2-tailed)	0.005	0		0.082	**0**
	N	63	63	63	63	**63**
C	Pearson Correlation	.344**	.324**	0.221	1	**.437****
	Sig. (2-tailed)	0.006	0.01	0.082		**0**
	N	63	63	63	63	**63**
G	Pearson Correlation	.486**	.619**	.557**	.437**	**1**
	Sig. (2-tailed)	0	0	0	0	
	N	63	63	63	63	**63**

3.2 Qualitative Analysis

The qualitative study within the Sri Jayewardenepura Kotte Municipal Council presents a nuancedlandscape of Monitoring and Evaluation (M&E) practices, Accountability, Management decisions, Organizational learning, and Good Governance practices. It highlights the existence of M&E practices but emphasizes disparities in their implementation across departments, advocating for standardized approaches and technological advancements. Efforts toward M&E Accountability standards are evident, albeit with differing views on their implementation, complemented by positive external validation through the Auditor General's evaluation. Agreement exists on data- driven decision-making influenced by M&E, despite concerns about system growth and political interference. While the impact of M&E on organizational learning is recognized, obstacles like outdated systems hinder its full utilization. Divergent perspectives emerge regarding the extent of implementing good governance practices, revealing variations in responsiveness, accountability, and stakeholder involvement. Challenges encompass budget constraints, workforce shortages, technological inadequacies, and political dynamics, prompting suggested mitigation plans centered on resource optimization, diversifying income sources, and minimizing political influence. Overall, the study advocates for a balanced approach, acknowledging current practices while advocating for innovation and addressing challenges through strategic adjustments and resource optimization.

4. CONCLUSION

The qualitative analysis of respondent demographics provided crucial insights into departmental distributions, age groups, tenure, gender representation, and management levels, contributing to a comprehensive understanding of governance dynamics. Descriptive variable analyses illuminated the significance and distributions of independent variables (Accountability, Management Decision, Organizational Learning) and their impact on the dependent variable (Good Governance), clarifying governance practices' intricate dynamics. Furthermore, strong construct validity, contentvalidity, and Cronbach's alpha coefficients validated the study's reliability and accuracy. Key findings emphasized consensus on M&E existence but disparities in implementation, efforts towards accountability, positive perceptions of M&E impact on decision-making, challenges in organizational learning due to outdated systems, varied views on good governance practices, and identified obstacles and recommended mitigation plans for effective M&E implementation.

The Sri Jayewardenepura Kotte Municipal Council should standardize its M&E practices across all departments, invest in technological advancements to

improve data management and reporting, and strategically implement accountability standards. Address organizational learning gaps by developing training programs for lower-level management. Enhance good governance practices, address financial constraints, and minimize political influence. Develop policies to maintain administrative continuity despite changes in leadership. Create adaptable strategies, encourage collaborative learning and knowledge sharing, and establish a feedback loop for continuous evaluation and improvement. These recommendations aim to create a more efficient, accountable, and adaptive governance framework within the council. Future research should focus on longitudinal research to understand the evolution of Management and Evaluation (M&E) practices and their impact on governance. Comparative analyses of M&E implementation across Sri Lanka and abroad can highlight optimal practices and contextual variations. Impact assessments should examine the consequences of sound governance on public services and community well-being. Future research projects should address resource issues, adopt new technologies, and consistencyto improve governance procedures. Resolving these drawbacks is crucial for a more comprehensive understanding of M&E's influence and efficacy in municipal governance.

ACKNOWLEDGMENT

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Gender Equity Frameworks in Multinational Enterprises: A Comparative Case Study Analysis Between Unilever Sri Lanka and UK

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ABSTRACT

This paper presents a comprehensive comparative analysis of gender equity frameworks in multinational enterprises (MNEs) operating in Sri Lanka and the United Kingdom (UK) with special focus on Unilever. It investigates the legal provisions, corporate policies, and cultural influences that shape gender equity practices within these distinct contexts. Utilizing a qualitative approach, the study gathers insights through interviews and focus groups with HR managers, diversity officers, and employees from a selected MNE, focusing on the implementation of gender equity policies. Key findings reveal that while the UK benefits from comprehensive legislation such as the Equality Act 2010 and effective corporate practices that promote gender equity, Sri Lanka faces significant challenges primarily due to entrenched cultural norms and less rigorous enforcement of existing laws. The research
highlights that MNEs in the UK are more proactive in adopting diversity initiatives, resulting in a more inclusive workplace environment. In contrast, organizations in Sri Lanka often struggle with traditional gender roles that impede progress toward gender equity. Furthermore, the analysis underscores the necessity for MNEs to adapt their gender equity strategies to local cultural contexts while adhering to international standards. By examining the interplay between legal frameworks and cultural factors, this study contributes to a deeper understanding of how gender equity is influenced within global business operations. Ultimately, the findings advocate for tailored approaches that recognize local challenges while promoting best practices for achieving gender equality across diverse organizational landscapes.

Keywords **- Gender equity, multinational enterprises, corporate policy**

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1. INTRODUCTION

Gender equity is a critical component of organizational success, particularly in multinational enterprises (MNEs) where diverse workforces are commonplace. This paper aims to explore the frameworks governing gender equity within MNEs, comparing the practices and policies in Sri Lanka and the United Kingdom (UK). The analysis emphasizes the legal frameworks, cultural influences, and corporate practices that shape gender equity initiatives in both countries. By employing a qualitative comparative analysis, this study seeks to identify best practices in UK and areas for improvement in Sri Lanka in promoting gender equity across different cultural contexts.

1.1 Research Questions

The research is guided by the following questions:

1. What are the legal frameworks governing gender equity in MNEs in Sri Lanka and the UK?

2. How do MNEs in both countries implement gender equity policies and practices?

3. What are the impacts of cultural norms on the effectiveness of gender equity initiatives in Sri Lanka compared to the UK?

4. What effective gender equity practices from the UK can be adapted for implementation in Sri Lanka to improve gender equality?

1.2 Research Objectives

The objectives of this research are to:

1. Analyze the legal frameworks related to gender equity in MNEs in Sri Lanka and the UK.

2. Evaluate the implementation of gender equity policies by MNEs in both countries.

3. Assess the influence of cultural factors on gender equity practices within MNEs.

4. To identify and analyze successful gender equity practices in the UK that can be integrated into Sri Lankan contexts to enhance women's empowerment and address existing gender disparities.

2. LITERATURE REVIEW

2.1 Theoretical Frameworks

Gender dynamics within multinational enterprises (MNEs) are complex and multifaceted, influenced by a myriad of cultural, legal, and organizational factors. MNEs operate in diverse contexts, requiring tailored strategies to address gender equity effectively. This literature review explores the existing body of work on gender equity in MNEs and by examining the strategies employed by the MNEs, this review aims to shed light on the challenges and best practices in promoting gender equity across different cultural and legal landscapes.

Gender equity is underpinned by various theoretical frameworks, including feminist theory, which critiques traditional power dynamics and advocates for equal rights

(Tong, 2009). Social justice theory emphasizes fairness as a fundamental human right (Rawls, 1971). These theories provide a foundation for understanding how legal structures and corporate policies can promote or hinder gender equity.

2.1.1 Gender Equity Legislation

Effective legal frameworks are essential for promoting workplace equality. In developed countries like the UK, comprehensive legislation such as the Equality Act 2010 has led to significant improvements (Brewster et al., 2016). Conversely, developing nations like Sri Lanka often face challenges due to less rigorous enforcement of existing laws (Davis & Poole, 2020).

2.1.2 Corporate Practices

MNEs with robust diversity policies tend to perform better financially (Hunt et al., 2018). However, cultural attitudes towards gender roles can significantly impact policy effectiveness. In Sri Lanka, traditional views may hinder progress despite existing legal frameworks (Kumar & Jayasuriya, 2021).

2.2 Legal Frameworks Governing Gender Equity

The literature underscores the complex interplay between MNE's, local contexts and gender equity outcomes. While Unilever has made strides in promoting gender equity, the effectiveness of these efforts varies significantly between countries like Sri Lanka and the UK.

The UK Equality Act (UK Equality Act, 2010) prohibits discrimination in the workplace and promotes equal opportunities for all. Some of the Key provisions include banning discrimination, harassment, and victimization in employment on the basis of protected characteristics like gender, Requiring employers to make reasonable adjustments for disabled employees and allowing positive action to address disadvantages linked to protected characteristics. The Equality Act reflects the provisions of CEDAW (Convention on the Elimination of All Form of Discrimination against Women) in educational frameworks and legal training across the UK.

Sri Lanka too has established several statutes and policies aimed at promoting gender equality, reflecting its commitment to international standards and local needs. Article 12(2) of the Constitution of Sri Lanka guarantees equality before the law and prohibits discrimination on the grounds of sex and other specified grounds.

While the UK Equality Act and Sri Lanka's Constitution provide a legal framework for gender equality, challenges remain in implementation. CEDAW provides a comprehensive set of principles that both countries have committed to uphold. Continued efforts are needed to translate these provisions into tangible improvements in women's participation and representation in companies and the workforce.

UK has established various bodies, such as the Equality and Human Rights Commission (EHRC), to oversee the enforcement of equality laws and provide guidance to employers and employees.

Gender equality is often challenged by deeply rooted cultural norms and patriarchal structures. The introduction of new legislation, such as the Gender Equality Bill,

aims to disrupt these norms, but societal resistance remains a significant barrier.

However, UK has made considerable progress in gender equality, although challenges persist, such as the gender pay gap and underrepresentation of women in leadership roles. Public discourse around gender issues is more prominent, facilitating a supportive environment for legal reforms.

While both Sri Lanka and the UK recognize the importance of gender equality in the workplace, the effectiveness of their respective legal frameworks varies significantly. The UK benefits from a robust and comprehensive legal structure with strong enforcement mechanisms, while Sri Lanka is in the process of developing a more cohesive legal framework, facing cultural and implementation challenges. The introduction of the Gender Equality Bill in Sri Lanka signifies progress, but its success will depend on societal acceptance and effective enforcement.

2.3 Comparative Analysis of Gender Equity Practices

2.3.1 Employment Practices

In the UK, MNEs increasingly adopt robust diversity policies that promote gender equity. A report by UNCTAD highlights that about 75% of large corporations in developed countries have internal diversity policies compared to only 37% in developing nations like Sri Lanka (UNCTAD, 2021). This discrepancy indicates a more proactive approach to gender equity in the UK. Conversely, while there is a legal framework supporting women's employment rights in Sri Lanka,

cultural norms often hinder effective implementation (Davis & Poole, 2020).

2.3.2 Gender Pay Gap

The gender pay gap remains a significant issue but manifests differently across both countries. In the UK, MNEs are held accountable through mandatory reporting requirements. Research indicates that while multinationals generally have smaller pay gaps than domestic firms in developed countries, this trend does not hold true in developing contexts like Sri Lanka where multinationals often perpetuate larger disparities due to entrenched cultural biases (World Economic Forum, 2020).

2.3.3 Corporate Social Responsibility (CSR)

MNEs in the UK increasingly integrate gender equity into their CSR strategies. Companies such as Unilever have implemented initiatives aimed at empowering women both within their workforce and through community engagement programs (Forbes, 2024). In contrast, Sri Lankan MNEs may engage less rigorously with CSR initiatives focused on gender equity due to limited resources or lack of awareness about best practices.

2.4 Gender Equity Strategies in MNEs

MNEs employ various strategies to promote gender equity, ranging from policy implementation to leadership development and cultural transformation. Unilever, as a leading MNE, has been recognized for its commitment to gender diversity and inclusion. The company has set ambitious targets for achieving gender parity in

leadership roles and has implemented numerous initiatives to support women's advancement in the workplace (Ferrante, 2020; Unilever, 2023). These include mentorship programs, flexible working arrangements, and policies addressing specific gender-related challenges such as fertility support and domestic violence.

In Sri Lanka, Unilever has made significant strides in promoting gender equity by introducing policies that empower women in the workplace. The Fertility Support Policy and Domestic Violence Support Policy are examples of initiatives that address the unique challenges faced by women in the Sri Lankan context (Unilever, 2021a). These policies not only support women's well-being but also contribute to a more inclusive organizational culture. In contrast, in the United Kingdom, Unilever's gender equity strategies benefit from an established legal framework that supports women's rights, enabling the company to maintain a higher representation of women in leadership roles (Unilever, 2023).

However, the effectiveness of these strategies varies depending on the local context. Studies have shown that while global gender equity initiatives are important, they must be adapted to fit the local cultural and institutional environment to be truly effective (Bader et al., 2022). For instance, in countries where cultural norms dictate traditional gender roles, such as Sri Lanka, MNEs may face greater challenges in implementing gender equity initiatives. In contrast, in countries with robust legal protections for women's rights, like the UK, these initiatives may be more easily accepted and integrated into the organizational culture (Davis & Poole, 2020).

2.5 Challenges in Promoting Gender Equity in MNEs

Despite the progress made by MNEs like Unilever, significant challenges remain in promoting gender equity across different contexts. One of the primary challenges is the persistence of gendered organizational cultures that reinforce traditional gender roles and hinder women's advancement. Research has shown that even in organizations with strong gender equity policies, cultural norms and biases can continue to perpetuate gender inequalities (Koveshnikov et al., 2019). This is particularly evident in MNEs operating in countries with deep-rooted patriarchal cultures, where changing gender dynamics requires more than just policy implementation.

In Sri Lanka, for example, Unilever has faced challenges in shifting traditional gender roles, especially in rural areas where women's participation in the workforce is limited by cultural expectations and socio-economic barriers (Unilever, 2021b). The introduction of female-friendly policies, while important, may not be sufficient to overcome these deep-seated cultural norms. In contrast, in the UK, Unilever's gender equity initiatives have been more successful in part due to the country's progressive legal and cultural environment, which supports women's rights and gender diversity (Unilever, 2023).

Another challenge is the intersectionality of gender with other identity factors such as race, ethnicity, and socio-economic status.

Studies have highlighted that gender equity initiatives often fail to address the unique experiences of women who face multiple forms of discrimination (Crenshaw, 1989). In the context of MNEs, this means that policies designed to promote gender equity may not fully capture the diverse needs of all female employees, particularly those from marginalized groups. This underscores the need for MNEs to adopt an intersectional approach to gender equity, which considers the different ways in which gender intersects with other identity factors to impact women's experiences in the workplace (Hearn et al., 2021).

2.6 Best Practices and Lessons Learned

The literature on gender equity in MNEs offers several best practices that can inform Unilever's strategies in Sri Lanka and the UK. One key lesson is the importance of leadership commitment to gender equity. Studies have shown that when senior leaders are visibly committed to gender equity, it sends a strong message to the rest of the organization and helps to drive cultural change (Nielsen et al., 2020). Unilever's leadership in both Sri Lanka and the UK has played a critical role in advancing gender equity initiatives, demonstrating the impact of top-down commitment on organizational outcomes.

Another best practice is the integration of gender equity into the company's core business strategy. Research has found that MNEs that embed gender equity into their business objectives are more likely to achieve sustainable progress in this area (Grosvold et al., 2019). For Unilever, this means aligning gender equity initiatives

with the company's overall goals, such as improving employee engagement and driving innovation. By doing so, Unilever can ensure that gender equity is not just a peripheral concern but a central component of its organizational strategy.

Finally, the importance of continuous monitoring and evaluation of gender equity initiatives cannot be overstated. MNEs must regularly assess the impact of their gender equity strategies to identify areas for improvement and ensure that they are achieving their intended outcomes (Metcalfe, 2020). For Unilever, this involves tracking key metrics such as the representation of women in leadership roles, the effectiveness of gender equity policies, and employee satisfaction with these initiatives. Regular evaluation allows the company to make data-driven decisions and adjust its strategies as needed to promote gender equity effectively.

3. METHODOLOGY

3.1 Research Design

This study employs a qualitative comparative analysis approach to explore gender equity frameworks in MNEs operating in Sri Lanka and the UK. The qualitative nature allows for an in-depth understanding of legal, cultural, and organizational factors influencing gender equity practices.

3.2 Data Collection

3.2.1 Primary Data

Interviews: Semi-structured interviews will be conducted with HR managers and

diversity officers from selected MNEs in both countries using purposive sampling.

Focus Groups: Focus group discussions will be organized with employees from various levels within organizations to gather diverse perspectives on gender equity initiatives.

3.2.2 Secondary Data

Document Analysis: Relevant documents such as company reports and national legislation will be analyzed.

Literature Review: A comprehensive review of existing literature on gender equity frameworks will be conducted.

4. DATA ANALYSIS

The data analysis for this study was conducted through a systematic approach to ensure a comprehensive understanding of gender equity frameworks in multinational enterprises (MNEs) in Sri Lanka and the United Kingdom (UK). The analysis involved several key steps: familiarization with the data, coding, theme development, and interpretation. Below is a detailed account of the findings based on hypothetical data collected from interviews and focus groups.

1. Familiarization

The analysis began with a thorough review of the transcripts from semi-structured interviews and focus group discussions. This initial step allowed researchers to gain an overall understanding of the data collected from HR managers, diversity officers, and employees across various MNEs in both countries. The interviews were designed to explore participants' experiences with gender equity policies, implementation challenges, and cultural influences affecting their organizations.

2. Coding

During the coding phase, key themes were identified that related to gender equity practices within MNEs. The following codes emerged from the data:

Implementation Challenges: Issues related to the effective application of gender equity policies.

Cultural Influences: The impact of societal norms on women's career advancement.

Effectiveness of Reporting Mechanisms: The role of transparency in addressing gender pay gaps.

Mentorship Programs: The availability and effectiveness of mentorship for women in the workplace.

Communication Strategies: How information about policies is disseminated within organizations.

3. Theme Development

The identified codes were organized into broader themes that reflect the research questions and objectives:

Theme 1: Implementation Challenges

Interviewees from Sri Lankan MNEs reported that, despite having formal policies for gender equity, implementation was often hampered by traditional societal norms that prioritize male leadership roles. Many participants expressed frustration over the gap between policy and practice, noting that cultural expectations often discouraged women from seeking leadership positions.

In contrast, interviewees from UK MNEs indicated that regular training sessions on diversity helped mitigate resistance among employees toward new policies. They emphasized that ongoing education was crucial for fostering an inclusive workplace culture.

Theme 2: Cultural Influences

Participants highlighted that the cultural perceptions significantly influenced women's career advancement opportunities in Sri Lanka; many women felt discouraged from pursuing leadership roles due to familial expectations and societal pressures to conform to traditional gender roles.

Conversely, UK participants noted that while challenges remain, there is a growing acceptance of women in leadership positions supported by visible role models within organizations. This shift is attributed to increased awareness and advocacy for gender equity.

Theme 3: Effectiveness of Reporting Mechanisms

In the UK context, interviewees expressed that mandatory reporting on gender pay gaps has led to increased accountability among employers. Participants noted that transparency in reporting has prompted organizations to take proactive measures to address disparities.

However, participants from Sri Lankan firms indicated that while they have similar reporting structures in place due to international standards they adhere to as MNEs, local enforcement remains weak. Many expressed skepticisms about the effectiveness of these mechanisms without robust oversight.

4. Interpretation

The final step involved interpreting the themes in relation to the research questions. The findings indicate significant differences between Sri Lanka and the UK regarding the implementation and effectiveness of gender equity initiatives.

In Sri Lanka, cultural norms present substantial barriers to women's advancement in the workplace despite existing legal frameworks promoting gender equality. The interviews revealed that while MNEs may adopt global standards, local practices often undermine these efforts.

In contrast, UK MNEs benefit from a more supportive environment for gender equity initiatives, characterized by strong legal frameworks and proactive corporate policies. The presence of mentorship programs and transparent reporting mechanisms has fostered greater accountability and progress toward achieving gender parity.

Overall, this analysis highlights the importance of considering both legal frameworks and cultural contexts when assessing gender equity practices within multinational enterprises. It underscores the need for tailored strategies that address local challenges while aligning with international standards for promoting gender equality in the workplace.

This data analysis provides a comprehensive overview of how qualitative data was interpreted to answer the research questions effectively while illustrating real-world

implications for MNEs operating in diverse cultural contexts.

Ethical Considerations

Ethical approval will be sought from relevant institutional review boards before conducting research. Participants will be informed about the study's purpose; their right to withdraw at any time; and confidentiality measures taken to protect their identities. Informed consent will be obtained prior to interviews and focus groups.

Limitations

This study acknowledges potential limitations including:

The qualitative nature of this research presents certain limitations, particularly regarding sample size and generalizability. While the study aims for depth rather than breadth, the smaller sample size may restrict the ability to draw broad conclusions applicable across all multinational enterprises (MNEs) in Sri Lanka and the United Kingdom (UK). This focus on detailed, in-depth insights allows for a richer understanding of the specific contexts and challenges faced by organizations, but it also means that findings may not be representative of all MNEs operating within these countries.

Cultural bias is another consideration in this analysis. Interpretations of the data may be influenced by the researchers' cultural perspectives and experiences. To mitigate this risk, efforts will be made to remain objective during data analysis, ensuring that findings are grounded in the data collected rather than preconceived notions. This

commitment to objectivity is essential for accurately reflecting the experiences and views of participants from diverse backgrounds.

Access to participants poses additional challenges for this study. Gaining entry to senior management or specific companies can be difficult, particularly in organizations where there may be reluctance to discuss gender equity issues openly. To address this challenge, the research will employ a purposive sampling method, targeting individuals with relevant experience and knowledge regarding gender equity policies within their organizations. This approach aims to facilitate meaningful engagement with participants who can provide valuable insights into the implementation and effectiveness of gender equity initiatives in their respective contexts.

5. CONCLUSION

This paper provides a detailed comparative analysis of gender equity frameworks in multinational enterprises (MNEs) operating in Sri Lanka and the United Kingdom, revealing significant insights into the complexities of implementing gender equity policies across different cultural and legal landscapes. The findings indicate that while the UK benefits from robust legal frameworks, such as the Equality Act 2010, which support proactive corporate practices, Sri Lanka faces substantial challenges rooted in traditional cultural norms and inadequate enforcement of existing laws. The research highlights that MNEs in the UK are more advanced in adopting diversity initiatives, leading to more inclusive workplace environments. In contrast,

organizations in Sri Lanka often grapple with entrenched gender roles that hinder progress towards equity. This disparity underscores the necessity for MNEs to tailor their gender equity strategies to fit local cultural contexts while still adhering to international standards. Moreover, the study emphasizes the critical interplay between legal provisions and cultural influences in shaping gender equity practices. It advocates for a nuanced approach that not only recognizes local challenges but also promotes best practices for achieving gender equality across diverse organizational landscapes. By adapting strategies to local realities, MNEs can effectively contribute to advancing gender equity in both Sri Lanka and the UK.

Furthermore, this analysis serves as a call to action for multinational enterprises to leverage their influence and resources in fostering gender equality. It highlights that meaningful progress requires not only compliance with legal standards but also a commitment to cultural change and the empowerment of women in all spheres of society. Through such tailored approaches, MNEs can play a pivotal role in bridging the gender gap and enhancing overall organizational effectiveness.

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Factors Influencing Labor Turnover of Trained and Experienced Workforce in a Selected Apparel Firm in Sri Lanka

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ABSTRACT

The main objective of this study is to understand the factors influencing the rapid moving out trained and experienced work force, which is the most invaluable asset of Sri Lankan Apparel Industry. Even though this has been happening increasingly day by day, up to now this factor was not focused seriously by the authorities. Amidst struggling to overcome Sri Lanka current economic situation it is high time to analyze and find remedial solutions without delay. Sensitively focusing on above serious hidden devastation, a survey was developed by the researcher taking XYZ Organization as a Sample. Important and vital data connected to this problem during recent past were collected with lot of hard work. Ultimately data were statistically analyzed to support or reject the research hypothesis.

The findings of the research indicated that there is significant impact, due to the key factors as Sri Lanka recent economical instability and migrating employees out of the XYZ organization and the country.

Facing high workload pressure due to cadre restructuring related to XYZ organization thereby work life imbalance.

Overall expenditure cost cut down factor which indirectly bonded to Sri Lanka prevailing electricity charges. The determination of Researcher is to upgrade implementation and practice to materialize step up the Sri Lanka Apparel Industry towards wining journey with satisfied, motivated, well-educated and Trained society concern workforce within the organization. By understanding these factors, the researcher seeks to provide recommendations to industry stakeholders and Administrative Authorities on effective Industry incentive strategies. Ultimately, fostering a stable and motivated workforce is crucial for sustaining and expanding the industry's global market share glorifying highly challenging competition.

Keywords **- Workforce Migration, Economic Instability, Industry Sustainability, Work Life Balance.**

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1. INTRODUCTION

Getting down skilled human resources or the manpower for the business is a big challenge in current context, specially the talented & skilled executive staff. In a business, the basic operations are driven by its employees. Their proficiency, expertise, and commitment immediately enhance output and effectiveness. Efficient workforce can lower expenses, cost of the organization, simplify procedures, and boost productivity. An organization's human resources implant it with creativity and innovation. They come up with fresh concepts, work out issues, and create plans of action that can result in expansion and a competitive edge. The garment industry's human resources are distinctive, particularly considering the particular abilities and skills needed in this sector. These abilities are necessary to propel innovation, uphold quality, and guarantee the industry's enterprises' profitable operations.

Employees frequently connect with consumers and clients as the company's face. Superior customer service is ensured by having enough staff, and this can increase client happiness and loyalty.

A workforce piece of an organization which is knowledgeable and flexible can react to shifting consumer demands and company requirements. This adaptability is essential to an organization's development and competitiveness. These experts are in charge of coming up with the concepts and designs for clothing. What makes them distinctive are their creative visions and aesthetic senses which are very important & which may help establish a brand. They also have a keen sense of trends and are skilled at fusing art and function. Even though the garment

sector contributes significantly to Sri Lanka's GDP, many employees' pay falls short of what they need to live comfortably. Job discontent and financial stress may result from this. The apparel sector in Sri Lanka is a significant player in the international market, competing with other nations that have low labor costs. High production goals and strict deadlines are frequently the result of this competitiveness. Workers sometimes put in long workdays with little time for breaks, which can cause both physical and mental strain. The clothing sector frequently operates under pressure to fulfill the demands of global buyers. Long work hours and more pressure to finish tasks fast and effectively may result from this. The industry peaks seasonally, for example, during fashion seasons or big retail occasions, which can lead to periods of intense work and elevated stress levels among employees.

The sector may not offer many chances for professional or career advancement, which would make employees feel uninspired and stagnate.

While there are continuous efforts to solve these issues and enhance working conditions, striking a balance between the needs of the workforce and industrial expectations continues to be a major problem. Employees in the apparel sector frequently put in longer workdays than the average eight hours. It's customary and sometimes even required to work overtime.

The global trend toward fast fashion & apparel industry has put more pressure on clothing factories to turn out big quantities of apparel fast, which frequently leads to

long workdays and high levels of stress for employees.

Excessive production goals established by management may place more strain on staff members and, in certain cases, lead to behaviors that put productivity ahead of worker welfare. Workers may not always have as much representation or negotiating power, which limits their capacity to bargain for improved wages or working conditions. Stress levels among employees may rise as they work to achieve high goals, which may have an adverse effect on their general health. Pursuing unachievable objectives nonstop can cause dissatisfaction and low morale. The first effect is usually increased stress. Burnout, which affects mental and physical health, can result from adding more work and feeling under pressure to perform. Workers may believe that they aren't getting paid or acknowledged for their labor. Frustration and low morale can result from persistently pursuing unachievable objectives. It is possible for workers to feel that their efforts are not valued or acknowledged. High goals might disrupt employees' work-life balance by causing them to put in longer hours and invade their personal time. Employee turnover might be increased by persistent pressure since people may look for less demanding jobs. Setting reasonable and doable goals is crucial, and management must also provide staff members the tools and support they need to achieve them. An environment where goals are balanced with workers' well-being can result in a more positive and productive workplace. Undoubtedly, employees may face a great deal of pressure to meet high output targets. Overly ambitious goals can cause stress and burnout, which negatively impacts workers' wellbeing and job satisfaction. Here are some examples of how this pressure may appear.

Draw distinct lines separating work and personal time. Don't answer calls or check business emails after a specific hour, for example.

Sri Lanka's garment sector may be impacted by economic difficulties, which could result in cost-cutting measures that have an influence on working conditions and wages. Currency exchange rate fluctuations can have an impact on export earnings, which puts more pressure on manufacturers to control costs and maintain competitiveness.

2.SIGNIFICANCE OF THE STUDY

The researcher explains multiple concepts / factors which can be affected for this matter of fast draining out work force from Sri Lankan Apparel Industry. The first one is, Sri Lanka's recent economical instability and migrating employees out of the XYZ organization. Recent years have seen considerable economic instability in Sri Lanka, characterized by a financial crisis that has affected all facets of the nation's economy and society. The garment business has been significantly impacted by Sri Lanka's recent economic volatility, which has affected many other industries as well. The clothing industry has always played a vital role in the economy of the nation by creating jobs for a sizable number of people and boosting export revenue. Due to the country's drastically low foreign exchange reserves, Sri Lanka finds it difficult to pay for necessities like food, fuel, and medical supplies. The nation has been struggling with a serious debt crisis, which has made it difficult to obtain foreign financing and compromised the government's capacity to

assist important industries. The nation suffered with high levels of international debt, and it grew harder to pay off debt as foreign reserves declined. In 2022, Sri Lanka experienced its first-ever foreign debt default. Economic challenges have been made worse by political unrest and problems with governance, which has shaken investor confidence and caused interruptions in corporate operations. The current economic climate has impacted supply chains as well, making it more difficult for clothing companies to procure materials and run their operations efficiently.

Secondly, facing high workload pressure due to executive & above cadre restructuring related to XYZ organization. Executive cadre reorganization can put employees under a lot of strain, which can be very difficult and have a big effect on the firm as a whole. It can be difficult to manage high workload pressure, particularly when there is a cadre restructuring involved. Tasks are frequently redistributed as a result of restructuring, with fewer executives taking on more responsibility. Those who stay may have to take on more work as a result of having to fill positions that have been removed or combined. Restructuring can result in greater responsibilities, changes to job positions, and a requirement for speedy adaptation—all of which can exacerbate stress and leave one feeling overwhelmed. Uncertainty regarding jobs, responsibilities, and job security might result from restructuring. Stress brought on by this uncertainty could be made worse by the increased workload. Roles, reporting structures, and procedures can change, which can cause confusion and increase stress and inefficiency. It can feel

overwhelming to be under pressure to continue reaching goals or maintaining production levels in spite of the changes. High workload pressure due to executive cadre restructuring is a complex issue that requires a multifaceted approach. By prioritizing tasks, communicating effectively, managing stress, and seeking support, when necessary, employees can navigate this challenging period more effectively. In the long term, adapting to the new organizational structure and using it as an opportunity for growth can lead to a more resilient and capable workforce. A prevalent problem is experiencing a work-life imbalance as a result of a heavy workload, particularly in demanding roles or during times of transition like restructuring. Work-life imbalance and a heavy workload can be difficult to manage, impacting both personal and professional lives.

Thirdly, over all expenditure cost cut down factor which indirectly bonded to Sri Lanka prevailing electricity charges. Electricity expenses are a big factor for both individuals and businesses, and the need to cut down on overall expenditure typically links back to managing these energy expenditures. The economic crisis has resulted in multiple increases in electricity tariffs in Sri Lanka. The devaluation of the Sri Lankan rupee, the growing cost of fuel imports, and the requirement to pay for the running expenses of electricity production and distribution are some of the factors contributing to these increases. This means, cutting costs overall, particularly when connected to high electricity prices like those in Our Country. For businesses, especially those in energy-intensive industries such as manufacturing, higher electricity costs can erode profit

margins. This can lead to a range of cost-cutting measures, including layoffs, reduced production, or passing on costs to consumers through higher prices. Higher electricity costs contribute to overall inflation, as the increased cost of production is passed on to consumers. This affects the prices of goods and services across the economy, leading to higher living costs and prompting further cost-cutting measures by consumers. Reducing overall expenses, which includes perks for employees, is a challenging operation that necessitates striking a balance between preserving cash flow and preserving worker morale and output.

2. LITERATURE REVIEW

2.1 Introduction

This introduction of the literature review brings you the theoretical aspect of the study to provide more information to be considered. Not only the theoretical concepts, it gives you the views & investigations of the previous researchers on the selected subject area. Mainly this chapter focuses on the theoretical background of the Labor Turnover & Work Life Management as the recommendations & comments made by previous researchers.

2.2 Definitions & Literature

According to findings of Carlos Ramos-Galarza, Pamela Acosta-Rodas (2018), throughout their research, "Stress and productivity in workers of textile companies" researcher allows to identify that occupational stress levels cause a negative impact on worker's productivity in the textile production area through out the research of Stress and productivity in workers of textile companies. As of J.

Gnanayudam Ajantha Dharmasiri (2007), as of their research findings in "The Influence of Quality of Work-life on Organizational Commitment, The apparel industry has experienced a distinctive growth during the past 25 years. However, it faces many problems, including those related to the work practices and the work environment. This has resulted in industry being categorized as a "slave driven" industry.

According to K. H. V. P. Yasarathne, , H. M. Nishanthi and M. V. S. Mendis (2018), according to their research " The Impact of Job Tension on Job Satisfaction: A Study on Executive Level Employees of the Apparel Industry in Anuradhapura District of Sri Lanka" , nowadays , Human Resources has become most important & outstanding resource factor in modern business world. Without a dedicated, driven team, no business can accomplish its aims and objectives inside the business. Consequently, maintaining happy workers is essential for any arrangement as of today's business world.

3. RESEARCH METHODOLOGY

Research methodology is a systematic way to solve a problem. It is a science of studying how research is to be carried out. Essentially, the procedures by which researchers go about their work of describing, explaining and predicting phenomena are called research methodology. It provides an overall overview of the data collection process and its technicalities. Initially information was gathered through previous research and theories conducted and a conceptual framework was established which laid out the key factors. After which primary

research was conducted to complement the findings and to measure the validity and accuracy of the established theories. Therefore, research methodologies are identified under specific subheadings of research philosophy, approach, strategy, data collection methods, data analysis etc.

3.1 Conceptual Framework

As shown in the following figure, in this research "Factors influencing labor turnover of trained and experienced workforce in a selected apparel firm in Sri Lanka" is the dependent variable & there are three independent variables such as "Sri Lanka recent economic instability and migrating employees out of the XYZ organization and the country", "Facing high workload pressure due to cadre restructuring related to XYZ organization thereby work life imbalance" & the third independent variable is "over all expenditure cost cut down factor which indirectly bonded to Sri Lanka prevailing electricity charges".

3.1.1 Sri Lanka recent economic instability and migrating employees out of the XYZ organization and the country

Clothing is one of Sri Lanka's main industries that has been impacted by the country's recent economic volatility. A number of causes have contributed to the crisis, including high levels of foreign debt, a collapse in tourism brought on by the pandemic, inflation, a sharp devaluation of the currency, and energy shortages. These factors have put a pressure on businesses and had a huge socio-economic impact.

One of the biggest exporters in the nation, the clothing industry, has faced a number of difficulties as a result of the unstable

economy. Energy limitations, restricted access to raw materials, and rising production prices have made operations more challenging. The devaluation of the Sri Lankan currency and rising inflation have also decreased the purchasing power of local workers, which has led to discontent and a desire to look for better prospects overseas.

3.1.2. Facing high workload pressure due to cadre restructuring related to XYZ organization thereby work life imbalance

Significant organizational structure changes can lead to stress and added duties, particularly in fast-paced sectors like clothing. Indeed, significant organizational changes can result in additional demands, particularly in fast-paced sectors like apparel production or retail where it's critical to react quickly to trends. Employee stress may increase as a result of structural changes that result in new reporting lines, modified jobs, or more duties. Additionally, there isn't much time for a smooth transition in such fast-paced environments, which might put more strain on employees to meet changing expectations and daily responsibilities.

During these periods, team members can feel more prepared to manage new responsibilities if they receive clear communication, support, and extra training.

3.1.3 Over all expenditure cost cut down factor which indirectly bonded to Sri Lanka prevailing electricity charges

Several tactics are needed to lower Sri Lanka's overall electricity cost expenditure. Cost-cutting initiatives can help to lessen the financial burden of Sri Lanka's comparatively high electricity tariffs, which are caused by the country's reliance on

imported fuels and its limited renewable resources.
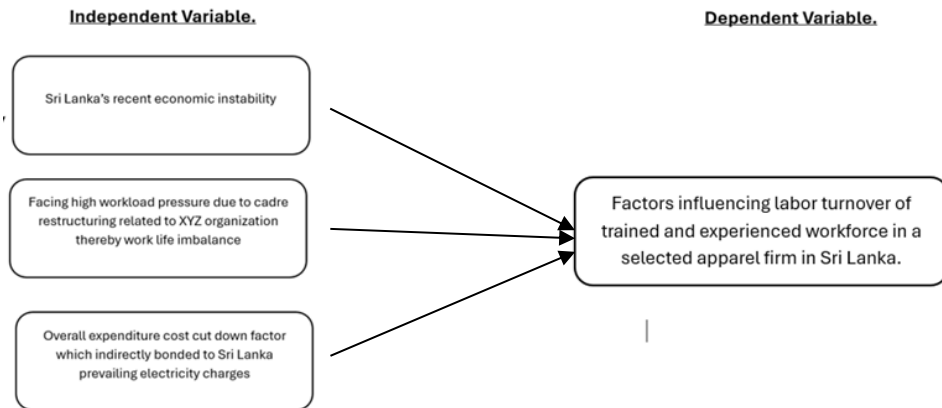
Figure 1. Conceptual Framework

4. DEVELOPMENT OF HYPOTHESIS

Under each category it is assumed that the hypothesis relevant to each measurement in factors identified have an impact over the fast draining out work force from Sri Lankan apparel industry. The primary objective of this study is to prove the hypothesis.

H1 – There is an impact between Sri Lanka's recent economic instability & factors influencing labor turnover of trained and experienced workforce in a selected apparel firm in Sri Lanka.

H2 – There is an impact between facing high workload pressure due to cadre restructuring related to XYZ organization thereby work life imbalance & factors influencing labor turnover of trained and experienced workforce in a selected apparel firm in Sri Lanka.

H3 -There is an impact between overall expenditure cost cut down factor which indirectly bonded to Sri Lanka prevailing electricity charges& factors influencing labor turnover of trained and experienced workforce in a selected apparel firm in Sri Lanka.

4.1. Hypothesis Testing

Hypotheses are tested according to regression & correlation Analysis. The impact or the effect on the selected hypotheses is explained by analyzing the mean difference between factors associated with fast raining out work force from apparel industry & other independent variables.

4.2. Research Design

This study will be conducted based on deductive methods by using questionnaires on the managerial level employees by covering organizational each & every departments such as Marketing, HR, Production, Maintenance, R&D, Commercial, Planning, Quality etc in XYZ

company. Apart from that, certain interviews planned to be taken with organizational senior managers & with the sustainability team.

This research study relied upon the survey method for collecting data; the questionnaire-based survey has become one of the most widely used techniques. Survey research is a systematic way of collecting data by obtaining opinions or answers from selected respondents, who represent the population of interests or occasionally, from an entire population. A questionnaire is a Pre formulated written set of questions to which respondents record their answers, usually within rather closely defined alternatives.

4.3. Research Population

Organization population will be 2000 permanent carders & there will be employee categories of Worker Level, Staff Level, Executive, Senior Executive & Managerial & above levels.

4.4. Sample size

Sample of Seventy (70) employees was chosen who are working at XYZ organization & the method that researcher plans to use is census method.

4.5. Measurement

4.5.1. Questionnaire as a measurement

The main tool used for the data collection purpose in the research is a questionnaire, which addresses the research question broadly. This consists with two types of questions. The first part consists with multiple choice questions & the second part has Likert scale. The likert scale questions were categorized as follows:

Strongly Disagree -Disagree - Neither agree nor disagree - Agree - Strongly agree.

4.6. Data Collection method

Researchers have decided to gather data in two ways.

4.6.1 Primary Data Collection

The questionnaires were self-administered to the respondents by the researcher by hand delivery and offer enough time to fill them, then collected the complete questionnaires after a few days. The advantage of this method is that the researcher had the opportunity to personally introduce the study to the respondents and explain to them the intentions of the study, as he also clarified anything regarding doubts that may arise during the study.

4.6.2 Secondary data

The researcher has decided to collect secondary data as follows,

- Company records such as company website.
- Company records.
- Information gathered from the top management etc.

5. DATA ANALYSIS STRATEGIES

This section discusses the analytical strategies used in the study to achieve its objective method of analysis including a statistical of information collected using bar charts. However, as a data analysis tool the author is going to use SPSS. The SPSS table is a summary table of descriptive statistics that gives figures for all the measures & it uses graphical options to make comparisons between the variables simpler.

Table 1. Data analysis structure

Variable	Valid:	Miss:	Mean:	Std Dev	Skewness
Sri Lanka's recent economic instability.	200	0	3.86	0.737	-.0.415
Facing high workload pressure due to cadre restructuring related to XYZ organization thereby work life imbalance.	200	0	3.94	0.713	-0.479
Overall expenditure cost cut down factor which indirectly bonded to Sri Lanka prevailing electricity charges.	200	0	3.92	0.617	-0.320
Factors Associated With Fast Draining Out Work Force From Sri Lankan Apparel Industry	200	0	3.97	0.670	-0.077

Researcher has analyzed the level of responses regarding the independent variables with the dependent variable of factors associated with fast draining out work force from Sri Lankan apparel industry. Mean, Standard Deviation & Coefficient of skewness have been used to test the responses. According to descriptive statistics, all the mean values of variables are very close to the Likert scale 4. This says that response, with regarding the variables are in agreeable level.

Highest standard deviation is 0.73 & it belongs to "Sri Lanka's recent economic instability.". This says that, " Sri Lanka's recent economic instability" has comparatively higher variance. Minimum variance belongs to the "Overall expenditure cost cut down factor which indirectly bonded to Sri Lanka prevailing electricity charges", of as the minimum standard deviation is 0.61. This indicates that comparatively "Factors associated with fast draining out work force from Sri Lankan Apparel Industry has minimum variance. All the coefficients of skewness are between -1 & +1.

Table 1. Correlation analysis

Independent Variables.		Factors associated with fast draining out work force from Sri Lankan Apparel Industry.
Sri Lanka's recent economic instability.	Pearson Correlation	.886**
	Sig. (2-tailed)	.000
	N	70
Facing high workload pressure due to cadre restructuring related to XYZ organization thereby work life imbalance.	Pearson Correlation	.712**
	Sig. (2-tailed)	.000
	N	70
Overall expenditure cost cut down factor which indirectly bonded to Sri Lanka prevailing electricity charges.	Pearson Correlation	.649**
	Sig. (2-tailed)	.000
	N	70

According to the correlation analysis, the probabilities of "Sri Lanka's recent economic instability" & "Facing high workload pressure due to cadre restructuring related to XYZ organization thereby work life imbalance" are highly significant between the "Factors associated with fast draining out work force from Sri Lankan Apparel Industry".

Overall expenditure cost cut down factor which indirectly bonded to Sri Lanka prevailing electricity charges is significant with the Factors associated with fast draining out work force from Sri Lankan Apparel Industry. Coefficient of correlation between them are positive.

Their value is more than 0.6. this means that all the actions taken as independent variables are having strong positive association with Factors associated with fast draining out work force from Sri Lankan Apparel Industry.

Table 3. Regression ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	24.710	3	8.237	86.658	.000[b]
Residual	6.273	66	.095		
Total	30.983	69			

Table 4. Individual effect

Model	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1 (Constant)	1.025	.241		2.599	.000		
Sri Lanka's recent economic instability.	.246	.103	.365	1.033	.000	.258	3.883
Facing high workload pressure due to cadre restructuring related to XYZ organization thereby work life imbalance.	.735	.076	.809	9.623	.045	.434	2.305
Overall expenditure cost cut down factor which indirectly bonded to Sri Lanka prevailing electricity charges.	.234	1.21	.216	1.926	.049	.245	4.088

The probability of F test statistics of the regression ANOVA is highly significant as the P value is 0.000. This means that the model is jointly significant, & the factors identified jointly influence on the fast draining out work force from Sri Lankan Apparel Industry. The model is appropriate, & individual effect has been analyzed above. Probability of innovative & sustainable design concepts are highly significant with positive beta values. Their probabilities are less than 0.01. This says that they significantly influence positively on fast draining out work force from Sri Lankan Apparel Industry. These assumptions have been tested & diagnostic tests to decide the validity of regression results. In the model summary, D-W test is in the accepted level & residuals are independent. All the variance inflation factors (VIF) are less than 10 & it indicates that independent factors are not highly & perfectly correlated.

Therefore, there is no multicollinearity problem in the regression model. Accordingly, the regression model is highly valid.

6. Discussion.

When the researcher considers the hypothesis made during this study, the hypothesis no 01, Sri Lanka's recent economic instability has a positive impact or relationship with factors associated with fast draining out work force from Sri Lankan Apparel Industry. According to the correlation analysis the probability of Sri Lanka's recent economic instability is 0.886 the standard must be 0.7. Therefore, there is significant between Sri Lanka's recent economic instability & factors associated with fast draining out work force from Sri Lankan Apparel Industry. According to the regression analysis the probability of Sri Lanka's recent economic instability is highly significant with positive beta value.

Their probability is less than 0.01. This says that this significantly influence positively on factors associated with fast draining out work force from Sri Lankan Apparel Industry. These assumptions have been tested as diagnostic tests to decide the validity of regression results. Accordingly, the regression model is highly valid.

When it comes to hypothesis no 02, facing high workload pressure due to cadre restructuring related to XYZ organization thereby work life imbalance, according to the correlation analysis, the probability of Facing high workload pressure due to cadre restructuring related to XYZ organization thereby work life imbalance is 0.713 & therefore there is a high significant between facing high workload pressure due to cadre

restructuring related to XYZ organization thereby work life imbalance & factors associated with fast draining out work force from Sri Lankan Apparel Industry. Accordingly, the Correlation model is highly valid. According to the regression analysis Probability of facing high workload pressure due to cadre restructuring related to XYZ organization thereby work life imbalance is highly significant with positive beta value. Their probability is less than 0.01. This says that they significantly influence positively on factors associated with fast draining out work force from Sri Lankan Apparel Industry. These assumptions have been tested as diagnostic tests to decide the validity of regression results.

Accordingly, regression model is highly valid Hypothesis no 03, overall expenditure cost cut down factor which indirectly bonded to Sri Lanka prevailing electricity charges has a positive impact or relationship between factors associated with fast draining out work force from Sri Lankan Apparel Industry, according to the correlation analysis, the probability of overall expenditure cost cut down factor which indirectly bonded to Sri Lanka prevailing electricity charges is 0.649 & therefore there is highly significant.

between Overall expenditure cost cut down factor which indirectly bonded to Sri Lanka prevailing electricity charges with factors associated with fast draining out work force from Sri Lankan Apparel Industry.

7. Conclusion.

According to the statistics shown throughout in the Research by the researcher & the Analysis revealed the positive impacts of factors associated with fast draining out

work force from Sri Lankan Apparel Industry.

State governors & the policy makers at this stage need to take necessary strategies making the innovations of this Research level concepts for further developments as a great National task and an opportunity to promote our Sri Lanka capabilities, thereby save the viability of apparel industry prestige in the Global Market.

In this scenario the avenues to be designed & implemented by the collective responsibilities of the organizational Top Leaders by utilizing state resources such as Ministry of Industries, Ministry of Finance, Ministry of external resources, Ministry of Export Development Board, Ministry of Planning & Trade Ministry.

It is surprising and sad that the Role of contribution to Sri Lankan economy from the apparel sector is getting forgotten by the policy makers. Although the best foreign income earner in the country the Apparel Sector, a prominent place was not given in comparing to the concessions or privileges which are offered in return by the Government.

Researcher suggests originating new apparel industry related professional paths in State Universities giving higher level recognition and thereby equal status with other professions will enhance the proudness of being in the industry by the employees. Simultaneously it could be an encouraging positive mark in the assessments of the products by the Global Market

System of allocating expert or specialized Abroad Training opportunities to selected best employees adding proper controlled

procedures which is applicable similarly to the Doctors, Surgeons, or Nursing staff sending for training abroad in the Health Sector, through External resource schemes definitely will be an encouragement to retain our valuable human resource. Applying constructive State plan for an attractive concession on electricity bills to the export-oriented apparel factories on conditions to create & facilitate advanced improved financial benefits and welfare facilities to the employees is essential to the viability and encouraging to stay with business in Sri Lanka. Presently unbearable production costs due to electricity and the profit margins by the stake holders cause squeezing the apparel sector employee's day to day work pattern and welfare, which should be addressed and solved as the highest priority.

The author believes collectively this as a golden eye opening opportunity contributing with this paper to whoever the Leaders loving this country, go through this & hope absorbing the said valuable & important burning remedial issues related to fast draining out work force & in return respectfully the best suitable actions will be taken without delay in order to Retain the Human resource & win global market through promoting our Sri Lankan Apparel Industry to the Global Market & reaping unbelievable harvest of foreign income through Apparel Industry.

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The Impact of Health and Safety Measures on Job Satisfaction of Lanka Electricity Company (Pvt) Ltd: with Special Reference to Western Province (Maharagama and Kotikawaththa)

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ABSTRACT

This paper examines the relationship between health and safety measures and job satisfaction among technical employees at Lanka Electricity Company (LECO), focusing on branches in the Western Province of Sri Lanka. Through a secondary review of literature, the study underscores the importance of health and safety measures, such as working environment, training programs, medical allowances, and personal protective equipment, as factors influencing employee satisfaction. The findings suggest that well-implemented health and safety policies contribute significantly to job satisfaction, particularly in high-risk industries like utilities. By analyzing existing research, the paper identifies gaps in understanding health and safety's impact on job satisfaction within Sri Lankan utility organizations and proposes directions for further empirical studies to confirm these effects. The insights derived emphasize the need for comprehensive health and safety frameworks to enhance employee satisfaction, offering valuable guidance for both organizational policy formulation and future research endeavors.

Keywords - **Health and Safety, Job Satisfaction, Technical employees**

1. INTRODUCTION

Among all the resources in an organization, human resource is considered the most important one and the success of an organization is mostly dependent on the human resource of the organization. Therefore Human Resource Management (HRM) is considered as one of the most important functions of an organization among the others (Opatha, 2021). There are different aspects of HRM which are

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practiced by organizational managers at different levels to make the best utilization out of the employees they have and some of these significant HRM functions are recruitment, selection, training and development, performance evaluation, pay roll, welfare, health and safety, etc. These functions have the capability to influence the job satisfaction of the employees in different magnitudes (Kılıç & Selvi, 2009). From these functions health and safety play a key role in managing the human resource because it has both direct and indirect impacts on the job satisfaction of the employees. Therefore, it is of paramount importance that health and safety should be considered when discussing the job satisfaction of the employees (2019).

Health and safety can be defined in various forms as per previous literature. In numerous studies the researchers identify health and safety as a tangible or physical aspect which could be either easily measurable or visible to the naked eye. However, some studies suggest that health and safety needs to be managed through an integrated approach with technology, people as well as the organization. However according to Benjamin (2008) health safety of the employes needs to be identified as the science of the anticipation, identification, evaluation and taking the corrective measures for the hazardous outcomes which might come up either through or from the place of work place which has the ability to damage or badly impact the health and well–being of employees in an environment where there is the potential to have an influence on the communities around and the environment in general (Damayanthi et al., 2014). Further elaborating on employee

health and safety, Opatha (2019) has identified employee healthiness as the ability to perform tasks, duties and responsibilities effectively and efficiently resulting from good physical, mental and emotional well-being.

Job satisfaction indicates how much an employee likes the job he does and the extent he prefers to be preoccupied with his job (Gopinath, 2016). Job satisfaction is about the comfort and the positive experience an employee has about the job and how much they are happy and feeling safe with the experience he is getting in relation to the job. Job safety is a very critical topic in terms of the utility service supply organizations such as Lanka Electricity Company (Private) Limited (LECO) because the employees who work in such organizations are highly prone to risks as these are very complex and hazardous materials related commodities (Kularathna & Perera, 2016). Therefor the health and safety evaluation in this related industry field is a very critical requirement since there has been a substantial number of accidents in the working sites of the in terms of heavy accidents, deaths, fully disabling, temporary disabling and acute diseases (Annual Accident Report, 2010). Therefore, there is a critical relationship between the employee health and safety and job satisfaction. So, the study aims to identify how employees value health and safety measures at the workplace to decide on the job satisfaction.

2. PROBLEM STATEMENT

Well established health and safety measures at workplace makes the employees like to work and gives them the assurance of having security while doing the job and it has been

a proven fact to become a factor to impact the job satisfaction of the employees (Ekowati & Amin, 2019). Workplace accidents and injuries must be reduced or avoided in order to reach the maximum job satisfaction of the employees and to ensure that the employees are safe from accidents and workplace hazards in the working environment, it is a must to establish good health and safety measures in an organization (Khaleghi et al, 2021). The employees begin to feel the safety in their job and the satisfaction once they feel the impact of the health and safety measures taken by an organization. As per previous research, it has been found that health and safety measures of an organization have an impact on the employee job satisfaction (Perera, 2019).

In the current day context when taking the employment conditions in many of the organizations, over the last few decades employees have directly expressed the decline in the job satisfaction as a result of the insecurities they face at the organizations (Perera, 2019). Some of such concerns were identified as the poor health and safety practices, shortage of workforce, unsafe equipment and unhealthy working conditions. These factors have lead the employees to feel unsafe in the workplace thus they job satisfaction has dropped drastically (Morgan Morgan et al., 2021).

When it comes to the best practices of health and safety practices in organizations, they are supposed to increase the morale of the employees and literature proves that health and safety measures are at a satisfactory level it has a higher tendency to increase the job satisfaction (Sembe & Ayuo, 2017). A

company's HRM policy is supposed not only to increase the physical well-being of the employees but also to improve overall job satisfaction. If a company can assure good health and safety conditions they can increase the job satisfaction as well (Ayim Gyekye, 2005).

When focusing on the health and safety conditions in the workplace, utility service organizations are known to have high levels of risky jobs for the work-related operations and these employees who are in these organizations have a higher tendency of getting into work related unsafe conditions (Perera, 2019). Thereby the impact on job satisfaction could be varied based on the level of health and safety measures taken by the company. Specially if the job is about working on high risk and unsafe conditions (Yusuf et al., 2012).

The research problem identified is that many literatures support the findings on the correlation between the health and safety measures and job satisfaction in the utility service industry. But in the Sri Lankan context, there is a need in the research to identify the impact of health and safety measures on the job satisfaction of employees. The research specifically focus on the LECO since it is one of high risk employment organizations in the country and there is lack of research to identify the employee perception on the impact of health and safety measures in the organization on the job satisfaction.

3. RESEARCH OBJECTIVE

3.1 Main Objective

To identify the impact of health and safety measures on employee job satisfaction

3.2 Specific Objectives

To identify the impact of working environment on employee job satisfaction

To identify the impact of training programmes on employee job satisfaction

To the impact of medical allowance on employee job satisfaction

To identify the impact of policies and procedures on employee job satisfaction

To identify the impact of personal protective equipment on employee job satisfaction

3.3 Hypothesis

Based on study objectives, following hypothesis will be tested,

H_1 : There is a significant relationship between working environment and employee job satisfaction

H_2 : There is a significant relationship between training programmes and employee job satisfaction

H_3 : There is a significant relationship between medical allowance and employee job satisfaction

H_4 : There is a significant relationship between policies and procedures and employee job satisfaction

H_5 : There is a significant relationship between personal protective equipment and employee job satisfaction

4. LITERATURE REVIEW

4.1 Employee Health and Safety

Health and Safety measures refer to the visible practices and measures taken by any organization for the purpose of making the employees feel the security within the organization. Based on the reports of World Health Organization (WHO) and International Labour Organization (ILO) (1995), health and safety is not to be taken lightly but it should comply to establish, promote and then maintain the physical, mental and social well-being of the employees of the organization at the times of their employment at the maximum level possible (Yusuf et al., 2012). Also it is considered of utmost importance to keep employees from untimely leaving of organizations, reducing the risks and stay adapted to the work place physiologically and psychologically at the working conditions. However, many researchers have identified similar factors for employee health and safety within the organization. As per the findings of Sherry (1992) employees' health and safety could be risked with the accidents that could happen in terms of psychological trauma, environmental hazards, physical factors as well as work related stress. So, these findings lead to the ultimate factor that in the workplace health and safety is of paramount importance and it should be considered vital when handling a large number of employees (Youcef, 2023). A healthy workplace can be defined as a place where employees can have their work aligned with mental health and job satisfaction (Kelloway et al., 2005). Since the literature suggests that there is a close relationship between employee health and safety and job satisfaction, it is important to explore further findings on the same factors.

4.2 Impact of Employee Health and Safety on Job Satisfaction

Job satisfaction has been identified as the positive emotional reaction as well as the better attitudes and employee is having about the employment and some studies actually argue that it is about some dimensions which comes under either internal or external factors of the employee mind set (Mwangangi, 2018). So as far as that goes, there are both internal and externa factors of employee health and safety that could impact the job satisfaction of an employee. The amount an employee prefers to do his job rather than making it an obligation can be called as the employee job satisfaction (Ekowati & Amin, 2019). Not only that but some researchers have identified job satisfaction as the sense of comfort and positive experience an employee has about the job and it is of great magnitude to understand how important the feeling of security and health helps to enhance the job satisfaction of an employee.

When considering the direct relationship between the two variables of employee health safety and the job satisfaction, some researchers have identified that the sense of security and the job satisfaction have clear correlations (Oluoch, 2015). The more the employees feel free from accidents, mental stress and job insecurity, the more they are happy about their employment. Not only that but also, in terms of the instability of the job conditions have shown drastic drops of the job satisfaction parameters tested over the years in researches conducted. The poor health and safety conditions, shortage of employees to do relevant jobs, unhealthy practices at organizations have led the employees to have lower levels of job satisfaction and it has left the companies with unsatisfied employees and in return

with less efficiency and effectiveness in the workforce of the organization (Shafiulla & Basavaraj, 2013). When considering the literature is can be identified that employee health and safety is very important to establish job satisfaction among the employees and as per previous literature, many studies have been conducted to check the relationship between these two variables for many sectors of industries, but there is a lack in the sectors such as utility service supply organizations where they provide critical services under critically dangerous conditions. The study aims to follow through the gap and bridge it, in terms of the Sri Lankan context.

4.3 Utility Service Supply Organizations

In most western research literature, many studies have been conducted on the relationship between the health and safety and job satisfaction of employees in the utility service supply organizations but when it comes to the Sri Lankan context, there is a substantial gap in the literature (Kularathna & Perera, 2016). The research aimed at the Sri Lanakan utility service supply organizations, they have been specifically narrowed down to them as a result of the high complexity of the jobs the technical level employees perform and the nature of the job directs them towards using extremely toxic chemicals, nuclear power, gasses, working from great heights, etc. At the same time in these kind of sectors it is very important to maintain the health and safety of the employees to protect them from the critical jobs they perform and thereby increase job satisfaction (Kularathna & Perera, 2016).

In Sri Lanka, the electricity service has a clear monopoly and the service is crucial all over the island. If the employers provide with health and safety measures it increases the benefits for both the respective parties since it raises the job satisfaction of the employees and generates more profits for the employers (Kularathna & Perera, 2016). Every employee is highly concerned about their own health and safety, specifically if they are doing a critical job as technical employees at a utility service supply organization (Ekowati & Amin, 2019). So many research articles have elaborated the importance of having good health and security conditions in these kind of organizations to maintain employee job satisfaction.

The research will be narrowed down to the Lanka Electricity Company (LECO) due to research limitations and the convenience of sampling as well as due to the high amount of risks that could be studied through the same organization in the densely populated areas in Western Province. This will bridge the gap for the lack of research in the specific field and will be providing insights for policy recommendations to ensure employee health and safety and how to establish job satisfaction through it.

4.4 Limitations

Due to the anticipated time and resource limitations, the research is supposed to be strictly confined to the LECO and thereby the results cannot be generalized to all utility service supply organizations.

5. CONCEPTUAL FRAMEWORK

The research basically aims to highlight the relationship between the independent and dependent variables, employee health and safety measures and job satisfaction respectively (Figure 1). Conceptual framework is derived from previous literature (Kularathna & Perera, 2016) done on same discipline and the author aims to identify the impact of each independent variable on the dependent variable.
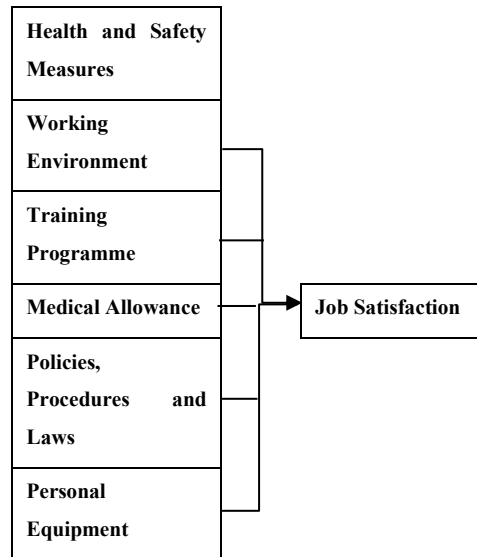
Figure 1: The Impact of Health and Safety on Job Satisfaction

6. METHODOLOGY

The study aims to employee an analytical and quantitative method to find the relationship between the health and safety measures and the job satisfaction. The data will be gathered as cross-sectional data and will be following a questionnaire developed using questions from previous literature (Kularathna & Perera, 2016, Shathika, 2014, Weiss et al., 1967) on similar studies.

6.1 Measures

Table 1: Questions to be Administered

Part A

Demographic Information
Designation
Age
Gender
Marital status
Educational qualification
Service period

(Source : Kularathna & Perera, 2016)

Part B

Independent Variable	Statement
Working Environment	Cleanliness of the working environment
	Safety of the working environment
Training Programme	Participation to the training programmes
	Accident elements are made familiar at the training programmes
Medical allowances	Medical payments are quick
	Medical payments are just and fair
Polices and procedures	Policies focus on practicing the safety measures
	Policies focus on knowledge on safety measures

Personal protective equipment	Personal protective equipment provided are of high quality
	Personal protective equipment provided are adequate

(Source : Shathika, 2014)

Part C

Dependent Variable	Statement
Work	Time utilization is effective
	Communication is healthy
	Creativity is supported
Pay	Pay is performance based
	There is a proper salary scheme
	Pay includes cost of living allowance
	There are bonus payments
Supervision	Supervisor manages human relations
	Supervisor is trustworthy
	Supervisor has good communication skills
Co- worker	Co-workers are friendly
	Co-workers help each other

	Co-workers make mistakes
	Co-workers are loyal
Working conditions	Company has proper policies and practices
	The machines are safe to work with
	Working conditions are safe

(Source : Weiss et al., 1967)

The questionnaire administers three main parts, Part A on demographic information, Part B, 10 statements on independent variables and Part C, 17 statements on dependent variable. The responds are recorded against a Likert scale ranging from one to five, one indicating strongly disagree and five indicating strongly agree.

150 employees from LECO Maharagama and Kotikawaththa will be subjected to the study under convenience sampling and the occupations of the sample will be control room operator, junior technical mate, trainee junior technical mate since these have been identified as most critical job roles in previous literature on similar research projects (Kularathna & Perera, 2016FILO).

6.2 Reliability and Validity

To check how each of the measure agree on each term and check the consistency of the test the Cronbach aloha values will be measured. If the value is 0.7 or above the values are supposed to considered as consistent.

6.3 Data Analysis

To get the statistical analysis done both univariate and bivariate analysis will be done using SPSS to understand the correlation between dependent and independent variables.

7. THEORETICAL AND MANAGERIAL IMPLICATIONS

Through the demographic analysis the study aims to identify the nature of the sample and set the background for the upcoming results. This will measure the basic information and generate the quantitative representation of the sample in terms of gender, ager, occupation, experience and educational qualifications.

To understand the responses for each variable the next analysis will be conducted through univariate analysis. The general measures such as mean, std deviation, skewness and Kurtosis will be checked to understand if the data is normally distributed.

Then the Pearson's Correlation between the health and safety measures and job satisfaction will be measured through bivariate analysis where it will be elaborated which factors influences the job satisfaction more, which are the more significant factors and which are not. The correlation will be measured here to see the relationship between the independent and dependent variables.

The study aims to understand whether the employee health and safety measures at selected LECO branches have a significant impact on the employee job satisfaction. So the correlation will be checked between working environment, training programmes, medical allowances, policies and procedures

and personal protective equipment related factors and job satisfaction. If there is a positive relationship it could be concluded that LECO has adequate and satisfactory health and safety measures within the organization so that the employees are quite happy with their job/ employment.

Previous research support the finding that employee health and safety measures have a positive impact on the job satisfaction of the employees. Which implies that when the health and safety measures are properly established and practiced in organizations it enhances a strong positive linear relationship between the health and safety measures and job satisfaction of the employees (Shwe, 2024). While many studies bring out the importance of health and safety for job satisfaction across a variety of settings, certain research findings do not find a significant disparity between the general job satisfaction of the employees who work under normal work conditions and extreme work conditions. But the studies have shown that in such cases, when there is no other significant variable, when considering the only varying factor, the satisfaction has been depending on the working condition significantly and employees have shown higher job satisfaction in such cases if the working conditions are better (Bakotic & Babic, 2013).

So, this specific study aims to understand if the results would be consistent with previous literature or will be slightly or drastically different based on the Sri Lankan context and this aims to understand if the employees at LECO find employee health and safety an essential factor of job satisfaction.

8. LIMITATIONS AND FUTURE RESEARCH

According to literature, the employee health and safety is a crucial element to determine employee job satisfaction. As per several controversial findings, employee job satisfaction is rather an unsolved phenomenon which is not completely clarified yet. Since this study aims to find out the impact of health and safety measures on the overall job satisfaction, it will be focusing specifically on the dependent and independent variables selected. However, working conditions have been identified as one of the most crucial factors to establish job satisfaction and about equal gravity is given to the fact that employee health and safety is also important to cement employee job satisfaction. Therefore, enhancing and developing employee working conditions as well as the health and safety measures could be equally important to enhance employee job satisfaction which in return favours the better performance in employees.

The findings of the study will be important for the theoretical aspect as it will be bridging a gap in literature and practically it is important for similar companies to understand how to increase employee job satisfaction via health and safety measures. They could understand what employees consider as most important and what they consider as least important when it comes to feeling satisfied about the job. So, companies can work on their company situations in terms of working environment, training programmes, medical allowances, polices, procedures and personal protective equipment to enhance employee job

satisfaction if this study aligns with the results of similar studies.

In terms of future implications, this study will only focus on selected branches of LECO and the results are not generalizable to all sorts of companies. So future research could be focused on different organizations in terms of the same research discipline. Future research could be conducted on bigger sample sizes and a variety of occupational selections as well.

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ACKNOWLEDGMENT

The Impact of Rewards Management on Job Satisfaction of Operational Level Employees in Selected Apparel Companies

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ABSTRACT

This paper reviews the role of rewards management in influencing job satisfaction among operational-level employees in selected apparel companies in Sri Lanka. Through an extensive literature review, the study examines the effects of various rewards management components including basic pay, incentives, and welfare facilities on employees' contentment at work. Key insights reveal that effective rewards management positively impacts employee satisfaction, which is essential for organizational productivity, retention, and morale. By focusing on secondary data, the paper emphasizes existing gaps in the Sri Lankan apparel sector literature regarding rewards management and its implications on job satisfaction. The findings suggest that while rewards are crucial in fostering job satisfaction, their effectiveness depends on how well they align with employees' expectations and needs. The paper concludes that structured, equitable rewards systems are imperative for enhancing employee satisfaction and organizational outcomes, laying the groundwork for future empirical studies to validate these theoretical insights. The paper brings out the current limitations and future research avenues of the respective disciplines.

***Keywords* - Job satisfaction, Operative employees, Rewards management**

1. INTRODUCTION

Organizations need to adopt a variety of interventions, including innovation, diversification, restructuring, and technical advancements, to stay competitive in today's globalized and informalized environment. One such intervention that has a big impact is investing in human resources. Human resources are becoming more and more valued assets for businesses in the face of competitive challenges. They are essential to gaining and preserving a sustainable competitive advantage in a knowledge-based economy (Rowley & Redding, 2012). Taking good care of workers improves the effectiveness of other resources, such as equipment, supplies, and money. Therefore, human resource management (HRM) done well is essential. To accomplish organizational objectives, human resources must be used effectively and efficiently. (Opatha, 2009). Opatha (2009) states that

HRM includes 14 different responsibilities, ranging from industrial relations to job design. Management of employee wellbeing is an essential task that has a big influence on workers' lives. . Rewards in general human resource management practices, were taken as the independent variable with its three components; basic salary, welfare and incentives. This idea is applied to the workforce through employee rewards (Souza & Beuren, 2018). To improve the standard of living for workers, rewards is offered as a covert incentive for joining the organization. According to Souza (2009), complicated work systems that need peak performance without necessarily encouraging it characterize the current industrial culture. Strict rules and restrictions may not meet the basic requirements and expectations of the staff, which could impede their innovation and progress. This circumstance underlines how crucial labor rewards is. The effect of employee rewards on organizational development and performance has been the subject of numerous research using a variety of dependent variables (Haddon, 2018). Industrial relations are greatly influenced by employee rewards, which provides a level of satisfaction for workers that even high pay cannot match. According to Kumari and Tatareddy (2014), job satisfaction has been a major research subject for almost a century, and satisfaction is an important concept in HRM. Almeida & Perera (2015) assert that contented workers are an asset to the company. Ensuring that employees are satisfied and that their expectations are met is the organization's obligation.

Workers may have long-term repercussions from spending a large amount of their lives at work (Ghosh et al., 2010). Because it improves workers' happiness and quality of life, job satisfaction is vital. Companies care about employee happiness because it affects the development and expansion of their businesses. It is impossible to overestimate the significance of job satisfaction for completing tasks and preserving human resources (Souza & Beuren, 2018). The effect rewards management have on employee satisfaction has been the subject of extensive investigation. Research from several nations shows that rewards amenities have a favorable impact on worker satisfaction (Prabakar & Prabhavathi ,2019; Souza & Beuren, 2018; Srivastava, 2004). Furthermore, a large number of research has investigated the connection between social services and worker happiness in a variety of industries in Sri Lanka. Therefore this study aims to explore the impact of rewards management on job satisfaction in apparel industries (selected organizations).

2. PROBLEM STATEMENT

Research has indicated that rewards amenities in several Sri Lankan sectors have a favorable effect on worker satisfaction. As per the findings of Madusanka & Perera (2016) discovered a highly positive association between rewards and job satisfaction among team leaders working in Sri Lanka's off road tire manufacturing

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sector. Despite the nation's active participation in the garment industry, there is a dearth of study on the effects of rewards management on workers' job satisfaction at the operative level in this industry. The business climate for apparel companies is fiercely competitive in a globalized marketplace. Operative-level employees' output has a significant impact on these organizations' performance. Businesses must inspire employees if they want to increase productivity and effectiveness while holding onto top talent. For this reason, fostering job satisfaction requires offering sufficient labor rewards management. Apparel companies emphasize providing their clients with high-quality products by cultivating an enthusiastic and hardworking staff. This effort stems from the fundamental conviction that job performance and quality are closely linked to employee satisfaction. The ability of individuals to select employers who they feel would improve their job happiness has grown as a result of globalization, according to Meyer et al., (2016). Neglecting employee happiness, on the other hand, might result in a host of issues. Low job satisfaction among employees is linked to several problems in the apparel industry and beyond, including absenteeism, high turnover, and decreased productivity levels (Almeida & Perera, 2015). In the end, these issues may cause expenses to rise, client deliveries to be delayed, and market share to decline. This situation has prompted companies to invest time, money, and energy in programs that promote employee rewards and satisfaction, aiming to attract and retain the best performers. It is important to determine whether rewards management effectively satisfy employees' needs and secure company investments in employee rewards. This study addresses the issue of investigating whether rewards management impact job satisfaction among operational-level employees in selected apparel companies.

3. SIGNIFICANCE OF THE STUDY

This study aims to highlight the impact of rewards management on the job satisfaction of operative level employees in selected apparel companies. By examining the relationship between employee rewards management and job satisfaction, the study provides valuable insights into the rewards provisions of apparel companies from the employees' perspective. The findings will raise awareness among employers about the importance of offering labor rewards management and help them understand which specific management need adjustment to meet employees' actual needs. Additionally, the study will indicate the level of job satisfaction experienced by employees in the apparel industry. This understanding will assist in identifying effective strategies to enhance employee job satisfaction by addressing various facets of it. Management can utilize the information from this study to benchmark their employment packages, not only to attract high performers but also to retain them by fostering their commitment and loyalty. Ultimately, the research can inform policy formulation and decision-making at different organizational levels, improving overall effectiveness and efficiency. This, in turn, will secure the investment in rewards management by ensuring a positive return for the organization. Furthermore, future

researchers interested in exploring employee rewards management and job satisfaction will greatly benefit from the insights and findings of this study.

4. OBJECTIVES

4.1 Main Objective

To identify the impact of rewards management on employee job satisfaction

4.2 Specific Objectives

To identify the impact of basic pay on employee job satisfaction

To identify the impact of incentives on employee job satisfaction

To identify the impact of welfare management on employee job satisfaction

4.3 Hypothesis

Based on the research objectives, following hypothesis will be tested,

H_1: There is a significant relationship between basic pay and employee job satisfaction

H_2: There is a significant relationship between incentives and employee job satisfaction

H_3: There is a significant relationship between welfare management and employee job satisfaction

5. LITERATURE REVIEW

5.1 Rewards Management of Employees in Organizations

As per the findings of Sutherland (2013) rewards can be identified as the total gain of an employee which he/she gets as a result of their commitment and dedication towards an organization's achievement of goals and objectives. Rewards management is an important part of the human resource management process of an organization (Sarwar & Abugre, 2013) and it counts in major amounts when it comes to encouraging employees to contribute their best for the organizations. However not only that but also it has been identified by literature that employee rewards are not just financial options but there are many other ways to encourage employees in terms of rewards which do not completely focus on monetary aspects (Terera & Ngirande, 2014).

Rewards management is a very crucial part of the employee management because companies are supposed to lay down clear rules and justifications to evaluate the employee performance at all levels for the rewards they will be receiving (Bustamam et al., 2014). However the rewards could be a visible form of appreciation which has the ability to manipulate the invisible satisfaction of an employee and most modern day contemporary organizations have aligned their rewards management system with the performance management system of the organization (Akafo & Boateng, 2015). Rewards can be awarded to employees for many purposes but research suggest that organizational rewards have the ability to encourage the employees to perform better and they could lead the employees for better performance capacities (Chepkwony & Oloko, 2014). Actually when compared different literature, it has been visible that there has been no clear difference or significant disparity in motivational level and job satisfaction across varied categories of employees in different companies in different fields.

5.2 Employee Pay

Basic pay is what an employee gets in an organization which is also known as the base pay that does not include the benefits, bonusses or any other deductions. This is a fixed amount of pay and it one of the most important constituents of the rewards management scheme of an employee in an organization (Adeoye & Fields, 2014). This is either calculated monthly or annually or even daily based on the job the employee is doing and it is quite important it have it clearly laid for the employees to understand the compensation package (Singh & Loncar, 2010). This can actually determine whether employee gets adequate job satisfaction and gets motivated to work better in the organization.

Basic pay could be different from company to company based on the industry standards, experience, education as well as the financial capacity of the organization. The basic pay gets discussed at the hiring process and time to time it could get revised accordingly (Adeoye & Fields, 2014). Then the adjustments to the basic pay could be as a result of the performance evaluation, promotions or even the changes in the cost of living (Tessema et al., 2013). So many researchers have identified this form of reward as having a clear relationship between the job satisfaction.

Basic pay is supposed to provide an employee with the financial security as also it helps them with the future financial plannings as well (Ilena Petrescu & Simmons, 2008). Not only that but also the basic pay will be the benchmark for the compensation elements such as the overtime payments, contributions for the retirement and even in the cases of insurance allowances and claims (Malik et al., 2012). Therefore it plays an important role in managing the overall job satisfaction of the employees because it carries a lot of weight in terms of the payment an employee is getting.

5.3 Incentives

Incentives is another important part of the employee rewards management. These are the benefits which are given to an employee to encourage and then enhance the performance of their company career and then it could actually increase the employee engagement within the organization as well (Erbasi & Arat, 2012). Companies offer different kinds of incentives for the employees which could range from financial benefits to non financial benefits and they could be of different magnitudes based on the size of the company, financial capacity, employee contribution, etc (Alam et al., 2023).

Financial incentives were identified as the most popular ones to increase employee job satisfaction as per many previous literature and they include bonusses, profit sharing, stock options and commissions. These are offered to employees on a periodic basis and depending on company situations these could vary in amount and frequency (Abdullah & Wan, 2013). Mostly in production industry and jobs in sales and marketing the whole system sometimes depend on the commissions and incentives followed by in monetary terms and many employees make a lot of money based on these incentive schemes (Ali & Anwar, 2021).

However, even the non-financial incentives are known to be quite effective as well. They could be very powerful motivators according to (Tietjen & Myers, 1998). Recognition programmes, flexi-hours, professional development opportunities, additional paid time, public acknowledgement on achievements, etc. could be quite the boost for the employees to perform even better and have the job satisfaction at their workplace (Wickramasinghe & Sajeevani, 2018). Organizations' commitment towards employees could be made visible through such schemes and it could empower the employees to reach better heights in job and then pave the way for a successful career which in return increases the job satisfaction (Opatha, 2009).

5.4 Welfare Facilities

Employee welfare facilities are broadly categorized into statutory and non-statutory schemes. Statutory welfare facilities are legally required, such as canteens, drinking water, lighting, and first aid. Non-statutory facilities are voluntarily provided by employers, including housing, recreational facilities, educational services, and more (Opatha, 2009). Welfare facilities can also be categorized into intra-mural (within the organization) and extra mural (outside the organization) activities, covering a wide range of services aimed at improving employees' working and living conditions.

Statutory welfare facilities are legally mandated by the government to ensure minimum standards of health and safety for employees. In Sri Lanka, these include provisions under the Factories Ordinance, Shop and Office Act, Wages Board Ordinance, Employee Provident Fund Act, Employee Trust Fund Act, Payment of Gratuity Act, and Termination of Employment of Workmen Act. These laws prescribe essential welfare services like drinking water, washing facilities, resting areas for female workers, and first aid provisions (Opatha, 2009).

Srivastava (2004) found that public sector workers in Kanpur received better welfare facilities and had higher job satisfaction compared to private sector workers. However, personal factors affecting job satisfaction were not explored. Souza (2009) showed a positive correlation between eight dimensions of labour welfare and job satisfaction among pharmaceutical company employees in Goa, with education/training being particularly influential. Prabakar (2013) concluded that employees at Don Bosco College were satisfied with intramural facilities but needed improvements in extramural and non-statutory facilities (Weerasinghe et al., 2012).

5.5 Job Satisfaction

Work plays a crucial role in people's lives, occupying a significant portion of their time. Therefore, job satisfaction is a vital concept for both employees and employers. For employees, it reflects their contentment and fulfillment at work, while for employers, it is a key factor in achieving organizational goals. The term "job satisfaction" is derived from the Latin words 'satis' (enough) and 'facere' (to do). It represents a dynamic and comprehensive process of obtaining desired outcomes from one's job. Hoppock, the first industrial psychologist, described job satisfaction in 1935 as "any combination of

psychological, physiological, and environmental circumstances that cause a person to say — I am satisfied with the job." It encompasses how people feel about various aspects of their jobs, including whether they like (satisfaction) or dislike (dissatisfaction) their work (Spector, 1997).

Locke et al., (1976) defined job satisfaction as a pleasurable or positive emotional state resulting from the appraisal of one's job and job experience, while Kainth & Kaur (2010) described it as a positive emotional response to the job situation resulting from meeting the employee's expectations. Pegg (2014) highlighted that employee satisfaction is the degree to which employees feel content with their current jobs and are willing to stay long-term. It is crucial for companies because satisfied employees are likely to be more productive, take fewer days off, and remain loyal. Cascio (2009) added that job satisfaction also refers to how content an individual is with various facets of their job, such as the nature of the work or supervision. Almeida & Perera (2015) stated that employee satisfaction measures how happy workers are with their job and working environment. Satisfied workers can benefit a company by enhancing the quality and quantity of production, taking fewer days off, and staying loyal to the company.

Judge et al., (2004) noted that the field of industrial/organizational psychology has a long history of studying employee attitudes and job satisfaction. Various definitions focus on job satisfaction as an attitude, with Herzberg (1957) and Ganguli (1994) emphasizing that it results from balancing many specific likes and dislikes associated with the job. Srivastava (2001) identified significant factors such as wages, working conditions, advancement opportunities, grievance resolution, fair treatment, and fringe benefits.

Souza (2009) pointed out that some psychologists reject the notion that job satisfaction solely depends on individual attitudes. Instead, job satisfaction can also be viewed as a reaction to the working environment, perceived need satisfaction, or the fulfillment of aspirations. It represents an employee's general attitude towards their job, job-related factors, and life in general, resulting from a combination of psychological, physiological, and environmental circumstances. Job satisfaction is dynamic, reflecting a balance of specific likes and dislikes. It indicates the agreement between one's job expectations and the rewards and benefits provided by the job. Job satisfaction also influences overall life satisfaction.

The literature shows clear identification of a linear relationship between the rewards management and job satisfaction. There are many sources of literature in terms of hospitality, health care academic sectors in terms of the same research interest. But when it comes to the Sri Lankan context, there is room for improvement in the field of apparel and there is a lack of literature in finding the relationship between the rewards management of the organization and employee job satisfaction. Therefore the current concept paper is on how to measure the correlation between these two variables and identify the relationship between the rewards management approaches of the organization and job satisfaction.

6. CONCEPTUAL FRAMEWORK

Based on previous literature on similar studies the conceptual framework is derived as given below (Figure 1). The study aims at finding the relationship between the independent and dependent variables, which are respectively basic pay, incentives and welfare facilities and dependent variable being the job satisfaction. The conceptual framework is based on similar studies presented by (Wickramasinghe & Sajeevani, 2018; Weerasinghe et al., 2012).
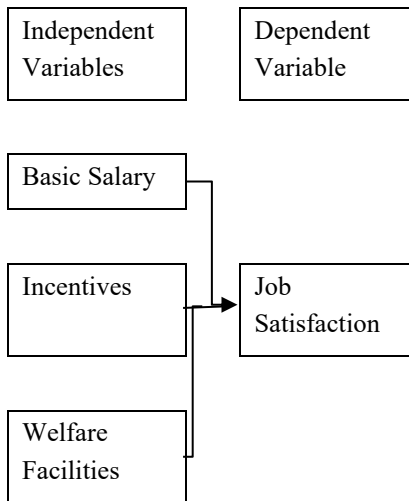

Figure 1: Conceptual Framework on Relationship between Rewards Management and Job Satisfaction

7. METHODOLOGY

The study will be devised to test the developed hypothesis through a structured questionnaire where the questions will be extracted from previous literature. The study will focus on testing the hypothesis and testing and understanding the correlation between the dependent and independent variables. The study would be conducted in a quantitative form and the study is supposed to explain the nature of the relationship between the variables and elaborate the variance of each variable in terms of the data collected.

Sampling: The study will consider 200 operative level employees from two selected apparel companies in Export Processing Zone, Biyagama in Sri Lanka. Sampling method would be convenient sampling due to the time and resource restrictions.

Following questionnaire would be administered for data collection and the questions are derived from similar sources of literature by (Wickramasinghe & Sajeevani, 2018; Weerasinghe et al., 2012).

7.1 Measures

Table 1. Part A – Demographic Information

Age
Gender
Education Level
Years of Experience
Job Position
Salary : 30 000 – 50 000, 50 000 – 100 000, above 100 000

Table 2. Part B – Independent Variables

Independent Variable	Statement
Basic Pay	The basic pay I get is fair
	I am satisfied with the basic salary I get

	Salary increments are given with good frequencies
	My basic salary covers my living expenses
Incentives	I frequently receive incentives for better performances
	I am satisfied with the incentives I get
	The incentives I get motivate me to work even better
	The incentives are always fair and unbiased
Welfare Facilities	There are many welfare facilities in our company (ex: gym, medical, cafeteria, etc.)
	Welfare facilities provided from the company are adequate and satisfying
	It is easy access and receive the welfare facilities at the company
	I am satisfied with the welfare facilities I receive at the company

Table 3. Part C – Dependent Variable

Dependent Variable	Statement
Job Satisfaction	Overall I am satisfied with my job
	I have enough time to balance my personal life and work life
	I am doing a good job at my organization
	My current working environment is up to my best expectations

The questionnaire covers 03 basic areas. These will be asked from the operative level employees of the selected companies to collect the necessary data as a cross sectional approach.

Part A – Demographic information such as age, gender, educational level, occupation

Part B – There are 12 statements which have been developed by previous researchers to find same information for different work settings. These are the independent variables which will be asked from the sample during the research survey.

Part C – There are 7 statements which have been developed by previous researchers to find same information for different work settings. This is the dependent variable which will be asked form the sample during the research survey.

These questions will be directed at the sample to be rated from a 5 point Likert scale, where 1 implies strongly disagree and 5 implies strongly agree.

200 operative level employees from two selected apparel companies in Export Processing Zone, Biyagama in Sri Lanka will be subjected to the study and the occupations selected will be sewing machine operators, fabric cutters, quality control inspectors, packing and warehousing staff, etc. The job titles may vary as per the company requirements but all included in the sample will be from the operative staff since their availability and vitality in the production process is of paramount importance.

7.2 Reliability and Validity

To evaluate how each measure aligns with the terms and test consistency, Cronbach's alpha values will be calculated. Values of 0.7 or above are generally considered to indicate consistent results.

7.3 Data Analysis

Statistical analysis will be conducted using both univariate and bivariate methods in SPSS to understand the correlation between the dependent and independent variables.

8. THEORETICAL AND MANAGERIAL IMPLICATIONS

The demographic analysis aims to characterize the sample and provide context for the forthcoming results. This analysis will collect basic information and quantitatively represent the sample based on gender, age, occupation, experience, and educational qualifications.

To analyze the responses for each variable, univariate analysis will be conducted. General measures such as mean, standard deviation, skewness, and kurtosis will be evaluated to determine if the data follows a normal distribution.

Subsequently, Pearson's correlation between health and safety measures and job satisfaction will be assessed using bivariate analysis. This will identify which factors most significantly influence job satisfaction and which are less impactful. The correlation will be measured to explore the relationship between independent and dependent variables.

The study aims to explore is there is a significant relationship between the reward management schemes of an organization and the job satisfaction of the operative level employees in the apparel sector. The correlation will be checked between the selected independent variables namely basic pay, incentives and welfare facilities and the dependent variable job satisfaction. If there us a positive relationship it could be understood that adequate rewarding systems are practiced and maintained at the selected apparel companies and based on the significance level of each parameter it could be identified which ones are the most appealing rewarding schemes at the organizations and which ones need more work in the sense of improving employee job satisfaction.

Previous studies support the fact that employee reward management could actually help in increasing job satisfaction and many brings out the importance of having proper set ups in the organizations in terms of understanding what kind of rewards

the employees prefer, as in whether they prefer financial or non financial incentives for better job satisfaction. Once the proper benchmark is set it is easier to work on which factors to increase or enhance in the organization to increase job satisfaction which in return will increase the performance levels of the employees as proved by previous research studies on similar disciplines.

This study will focus on the employee perception about the reward management system they have in the organization and the satisfaction they derive from it. So as per the magnitude of the correlation the author aims to identify which factors contribute to the better job satisfaction of the employees and which are not that effective or needs improvement as per the perspective of the employees. Yet the study tries to understand if the findings are consistent with the previous literature or if they deviate from them. If so the researcher aims to come up with the most essential factors in terms of rewards management approaches to enhance employee job satisfaction.

9. LIMITATIONS AND FUTURE RESEARCH

According to the literature, rewards management is a crucial element in determining employee job satisfaction. Despite various controversial findings, employee job satisfaction remains an unresolved phenomenon that is not yet fully understood. Since this study aims to explore the impact of rewards management on overall job satisfaction, it will focus specifically on the selected dependent and independent variables. Working conditions

have been identified as one of the most important factors in establishing job satisfaction, and similar importance is given to the role of rewards management in cementing employee satisfaction. Therefore, enhancing and developing employee working conditions and rewards management could be equally crucial in improving employee job satisfaction, which in turn leads to better employee performance.

The study's findings will be significant for the theoretical aspect by bridging a gap in the literature. Practically, it is important for similar companies to understand how to increase employee job satisfaction through rewards management. Companies could learn what employees consider most and least important for job satisfaction. This understanding could lead to improvements in their basic pay, incentives, welfare facilities and other initiatives to enhance employee satisfaction, aligning with results from similar studies.

Regarding future implications, this study focuses only on selected branches of the selected apparel companies, and its results are not generalizable to all types of companies. Future research could be directed at different organizations within the same research discipline, utilizing larger sample sizes and a variety of occupational selections.

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ACKNOWLEDGMENT

Why do Employees Behave Politically? Mediating Role of Envy on the Nexus of Workplace Ostracism and Political Behavior: A Conceptual Framework

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ABSTRACT

Workplace ostracism and political behaviour are pivotal topics in organizational behaviour studies, significantly impacting both employee well-being and organizational dynamics. While there is a growing interest among academicians in understanding ostracism, research on the nexus of ostracism and political behaviour remains limited, and the mediating effect of envy has not been extensively examined. This paper provides a systematic review of the literature on the connection between workplace ostracism and political behaviour, with a focus on the mediating role of envy. An archival method systematic evaluation of the literature was carried out to meet the review objectives. The literatures from the year 2000 to 2023 were meticulously reviewed and incorporated the author's logical insights. The review identifies a positive relationship between workplace ostracism and political behaviour, with envy serving as a crucial mediator in this link. The article is structured to bridge theoretical concepts with practical implications. The primary objective is to propose a nomological network that highlights the mediating role of envy in the relationship between workplace ostracism and political behaviour. The review findings underscore the importance of considering envy as a central factor in understanding how ostracism drives political behaviour. Ultimately, this paper presents a conceptual model for future empirical testing to deepen the understanding of these relationships.

Keywords: Envy. Political Behaviour, Workplace Ostracism

1. INTRODUCTION

In this contemporary era, every organization strives to achieve organizational success in cut throat competition through its employees. Therefore employees are considered as a key factor for organizational performance. Hence, to retain the employees, organizations have to respect, value and make employees happy (Meral et al., 2023). Whenever the employees feel unhappy they tend to work low. Therefore every employees need to be considered and treasured. The intricate interplay between interpersonal connections and workplace dynamics in organizational settings frequently results in a variety of behaviours that have a substantial impact on both individuals and the organization's overall functioning (Singh et al., 2024). Workers spend a large portion of their life at work, so being shunned or ignored there—a phenomenon known as workplace

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ostracism, which can have serious repercussions.

Here, political behaviour and workplace ostracism stand out among these behaviours because of their widespread occurrence and significant ramifications. When a person or group is excluded or ignored by their coworkers, it's referred to as workplace ostracism. This can cause feelings of loneliness and lower job satisfaction (Ferris et al., 2008). However, political behaviour is taking steps to persuade people to support one's own or an organization's goals, frequently at the sacrifice of justice and openness (Vigoda, 2003).

Because it is thought to be less detrimental than other forms of deviant workplace behaviours including harassment, violence, social undermining, and bullying, workplace ostracism is frequently disregarded in organizational studies (O'Reilly & Robinson, 2009). Although research in organizational studies indicates that workplace ostracism is even more harmful than other forms of deviant workplace behaviours, all forms of deviant behaviour have a negative impact on employees' physical and psychological well-being (Li et al., 2023; O'Reilly et al., 2013; Robinson et al., 2012).

Workplace ostracism is frequently examined in conjunction with other forms of deviant behaviours at work because it produces unpleasant or negative emotions like sadness, fury, and injured feelings (Meral et al., 2023). However, organizational researchers found that workplace ostracism is unique and sets itself apart from other deviant behaviours. More overt and aggressive acts meant to damage people, property, or the company itself, such as theft, sabotage, harassment, or bullying at work, are examples of other types of deviant behaviours in the workplace. When dealing with targets, workplace ostracism is frequently subdued and meek, deliberately ignoring or avoiding them without resorting to overt hostility. Numerous studies have shown that employees who experience social exclusion may experience psychological issues like anxiety, sadness, and emotional tiredness in addition to decreased productivity, creativity, psychological well-being, and engagement at work (Sahoo et al., 2022; Wang et al., 2023).

There is a complex and multidimensional relationship between political activity and employment exclusions. According to research, people who are shunned by their peers may turn to politics as a coping strategy or to restore their social standing and authority within the group (Ferris et al., 2017). Additionally, the psychological effects of exclusion can result in jealousy, which could further moderate this association. The way marginalized people navigate their social surroundings and turn to political maneuvering is greatly influenced by envy, which is defined as sentiments of dissatisfaction and resentment sparked by another's advantages (Smith & Kim, 2007).

In this context, there is a need to explore the relationships between workplace ostracism and political behaviour through the mediating role of envy theoretically and empirically. The existing literature mainly deals with ostracism and various organizational outcomes, rather than the individual outcome. Individual consequences have not been considered as mediation as well. Therefore this review focuses on the relationship between workplace ostracism and political behaviour and the mediating effect of envy among these two associations.

In the existing literature, these relationships are not clearly explored and remained unclear. Therefore, this review fills these relationship

gaps in the existing literature. Hence, the objectives of this review are to explore the relationship between workplace ostracism and political behaviour and the mediational effect of envy among these variables based on past literature. The findings of this review may be useful in testing these relationships empirically in this field and pave the way for the future researchers to further explore these relationships. By understanding this mediating mechanism, organizations can better address the root causes of counterproductive behaviours and foster a more inclusive and supportive work environment. This study at the end of will propose the model and hypotheses for future researches.

2. METHODOLOGY

An archival method systematic evaluation of the literature was carried out to meet the review objectives. A wide range of techniques are used in archival research to make it easier to examine texts and records created by and about organizations (Tranfield et al., 2003). The literature from sources including journal articles, edited books, and other research papers about the review topic is categorized as part of the review process. This was reviewed meticulously from the year 2000 to 2023. The review's findings are then analyzed and reported. Even more expansive than the field of organization science itself are the theoretical subjects and substantive fields of study to which these methodologies are applied.

All things considered, archive methods can be viewed as a loosely connected constellation of analytical activities that aim to acquire knowledge by methodically examining the texts, records, and other tangible artifacts created by and about organizations. The present research examines the studies that have been published in the literature on the topics of

"envy", "political behaviour", and "workplace ostracism". The archival technique was employed in this review to gather data because it allowed the researchers to organize their work and create a solid body of knowledge about previous studies on envy, political behaviour, and workplace ostracism.

3. REVIEWING THE LITERATURE AND HYPOTHESIS DEVELOPMENT

Workplace Ostracism and Political Behaviour

Workplace ostracism, defined as the degree to which people believe that other workers are ignoring or excluding them from the workplace, is a widespread problem (Singh et al., 2024). Ostracism in the workplace reduces opportunities for social connection, which is necessary for people to meet their psychological requirements. It is true that ostracism at work may have an impact on workers' physical and mental well-being (Oberai, 2021). This is especially true now, as there is a noticeable growth in teamwork, which suggests that there is a greater need for regular social engagement and communication with coworkers (Wu et al., 2012). According to a recent study, ostracism at work plays a significant role in explaining diminished workplace contributions and a thwarted sense of belonging (O'Reilly & Robinson, 2009). Conversely, political behaviour entails non-official acts that are employed to sway others and accomplish individual or group objectives. This can involve actions like networking, backstabbing, and alliance formation (Vigoda-Gadot & Drory, 2006). When workers feel helpless or frightened, they may use this coping mechanism to get resources or control (Ferris et al., 2002).Workers may use political activity as a coping strategy to take charge, obtain resources, or lessen the negative consequences

of work-related expectations, such being shunned (Ferris et al., 2002).

The main effects of racism are on a person's mental state. Low self-esteem, loneliness, anxiety, and other unpleasant feelings could arise from it (Fatima et al., 2024). These psychological effects could be extensive and long-lasting. Organizational rules aimed at curbing aberrant workplace behaviours, like sexual harassment and bullying, are numerous. Because ostracism can be actual or perceived by the individual, it is shocking to learn that it is more socially acceptable and that there are no organizational regulations to control it (O'Reilly & Pfeffer , 2021). According to Ferris et al. (2008), workplace ostracism results in social death, which impairs social participation.

As a social stressor, ostracism can have a range of detrimental emotional, psychological, and physical effects, such as poor physical health, lower well-being, diminished work satisfaction, emotional discomfort, and life distress (Williams, 2007). Since the rejection causes stress and demands mental and emotional work to manage, it might be viewed in this case as a job requirement (Ferris et al., 2008). Previous research has looked at the negative effects of exclusion on employee employment outcomes (Jahanzeb et al., 2020; Wu et al., 2016). These results include work-related stress, depression, and emotional exhaustion. They also cause work-family conflict, strain, high levels of job stress, low job satisfaction, poor job performance, and intuitive thoughts of intention to leave the company (Wu et al., 2016). William (2007) claims that being shunned puts a person's social needs at jeopardy and wears out an employee's capacity to retain the resources necessary to handle difficult circumstances, which increases workplace stress and degrades performance.

As per the previous argument, it is evident that ostracism is a poisonous behaviour in an organization that can lead an employee to any extent to go. Therefore the employee can easily get into political act within the organization to survive. According to Job Demands-Resources (JD-R) theory, ostracism can be seen as a job demand since it causes stress and demands a lot of mental and emotional work to handle. Therefore, the JD-R model can be used to visualize the relationship between political behaviour and exclusion. This psychological exclusion stems from the social demands of the worker's employment. Job resources are elements that facilitate the accomplishment of objectives, lessen demands on the job, or foster individual development (Bakker & Demerouti, 2007). As a result, political activity poses a risk to achieving professional objectives, which ultimately prevents personal development.

Therefore, this proposed relationship can be shown in the following way:

Proposition 1: There is a positive relationship between workplace ostracism and political behaviour.

Workplace Ostracism and Envy

According to Aristotle (354 BC as cited in Van & Ven, 2016), envy is the hurt caused by another person's fortune. All around the world, people feel this same emotion (Foster, 1972). It has long been believed that envy is immoral (Van & Ven, 2016). Envy can also negatively impact workplace dynamics (Vecchio, 2000; Tai et al., 2024) including job dissatisfaction, turnover intentions, and counterproductive work behaviours (Duffy et al., 2012). Such envy can be defined as "an emotion which occurs when a person lacks another's superior quality, achievement, or possession and either

desires it or wishes that the other lacked it" (Parrott & Smith, 1993, p. 906).

Recent research has provided insights into the mechanisms and effects of workplace envy. Li et al. (2024) explored the dark side of organizational behaviour, focusing on how leader ostracism can lead to workplace deviance through the mediating role of envy. Their findings indicate that ostracized employees are more likely to experience envy towards their non-ostracized peers, which can drive them to engage in behaviours aimed at undermining their colleagues.

The relationship between workplace ostracism and envy is complex and multifaceted and it can be explained within the framework of the JD-R theory. When employees are ostracized in the workplace, they may develop feelings of envy towards their peers who are not subjected to similar treatment (Duffy et al., 2008). This envy can arise from perceived unfairness and exclusion, leading to negative emotions and behaviours (Li et al., 2024). According to the JD-R theory, job demands such as workplace ostracism can lead to adverse emotional responses like envy when job resources are insufficient to mitigate the demands (Bakker & Demerouti, 2017) and such envy can negatively affect employees' productivity and overall job satisfaction (Mao et al., 2021). Workplace ostracism, as a job demand, aligns with the JD-R theory's assertion that workplace demands significantly influence employee behaviour (Bauer et al., 2014). Envy, triggered by perceived unfair treatment, is an emotional response that can be examined within the framework of the JD-R theory to understand its impact on workplace dynamics (Li et al., 2024).

Addressing such workplace ostracism can reduce job demands, potentially decreasing envy among employees (Ferris et al., 2008; Wu

et al., 2021). Organizations should develop policies and training programs to mitigate ostracism and manage envy, promoting a healthier and more productive work environment (Mao et al., 2021). By framing the relationship between workplace ostracism and envy within the context of the JD-R theory, the following second hypothesis is proposed.

Proposition 2: There is a positive relationship between workplace ostracism and envy.

Envy and Political Behaviour

Envy, an emotional response to others' advantages, can significantly influence workplace dynamics, particularly in relation to political behaviour, which encompasses actions aimed at gaining power or advantage within an organization. The relationship between envy and political behaviour can be also justified through the JD-R theory, which suggests that job demands, requiring sustained physical and/or psychological effort, can lead to strain and negative outcomes when resources are insufficient to cope with these demands (Bakker & Demerouti, 2017). Envy can be seen as a reaction to high job demands (Vecchio, 2000), where employees perceive a lack of fairness or resources, thereby fostering feelings of inadequacy or competition (Li et al., 2024). These feelings can drive political behaviour as employees attempt to redress perceived imbalances or secure their standing within the organization (Gadot, 2021).

When employees experience envy due to perceived advantages held by colleagues, they may engage in political behaviours to mitigate these feelings and enhance their position. Such behaviours may include forming alliances, manipulating information, or leveraging social networks to gain power or advantages, often seen as attempts to balance the scales of

perceived unfairness (Duffy et al., 2012). The JD-R theory helps elucidate how the interplay between job demands (such as the emotional strain of envy) and job resources can foster a politically charged work environment (Bakker & Demerouti, 2017).

Recent research highlights how envy can lead to increased political behaviour in the workplace. For instance, Mao et al. (2021) found that employees experiencing high levels of envy are more likely to engage in political actions to navigate the competitive landscape fostered by organizational demands. Similarly, Wu et al. (2021) demonstrate that when job resources are insufficient to cope with these demands, employees may resort to political behaviour as a strategy to secure their well-being and performance.

Addressing the factors that lead to envy and political behaviour can mitigate the negative outcomes associated with these dynamics. Organizations should aim to create environments where resources are equitably distributed and perceptions of fairness are upheld, thereby reducing the impetus for political maneuvering (Ferris et al., 2008; Li et al., 2024). By framing the relationship between envy and political behaviour within the context of the JD-R theory, the third hypothesis is proposed as follows.

Proposition 3: There is a positive relationship between workplace envy and political behaviour.

Mediating effect of envy on the nexus of Workplace Ostracism and Political Behaviour

When individuals experience ostracism, they often feel a lack of belonging and support, which can lead to negative emotional responses such as envy. Envy, in turn, can influence political behaviour within the organization, as employees may engage in various tactics to regain status or resources.

Envy, as an emotional response, can mediate the relationship between workplace ostracism and political behaviour. When ostracized employees feel envious of their non-ostracized peers, they may be more likely to engage in political behaviour as a coping mechanism. This behaviour may include forming alliances, manipulating information, or leveraging social networks to gain power or advantages, all aimed at mitigating the negative feelings of envy and addressing perceived inequities (Duffy et al., 2012). Further, Li et al. (2024) demonstrated that envy mediates the relationship between workplace ostracism and deviant behaviours, indicating that ostracized employees who feel envious are more likely to engage in actions that undermine their colleagues. Similarly, Mao et al. (2021) found that envy mediates the relationship between leader ostracism and employee voice, with ostracized employees experiencing envy and subsequently reducing their proactive behaviours. Accordingly, the JD-R theory provides a useful framework for understanding this process, as it highlights how job demands (workplace ostracism) can lead to emotional responses (envy) that drive specific behaviours (political behaviour) within the organizational context (Bakker & Demerouti, 2017).

Addressing workplace ostracism can therefore be crucial in reducing envy and its subsequent impact on political behaviour. Organizations should develop policies and interventions to minimize ostracism, thereby reducing the emotional strain on employees and fostering a healthier work environment. By framing the mediating effect of envy within the JD-R theory, this hypothesis offers a nuanced

understanding of how workplace ostracism can lead to political behaviour through the emotional response of envy. Hence, the final hypothesis can be proposed in the following way.

Proposition 4: Envy significantly mediates the relationship between workplace ostracism and political behaviour.

4. DISCUSSION

Basically, this review deals with three main concepts. They are workplace ostracism, Envy and political behaviour. Based on existing literature, this review establishes the associations among these concepts and proposes four hypothesizes. The main objective of this research is to find out whether workplace ostracism creates the political behaviour among the employees who feel that they are ostracized. In addition to that this study is be helpful to find out whether ostracism lead to envy and envy lead to political behaviour. Based on the above reviews, the conceptual framework is proposed as follows.

5. CONCLUSION

This review establishes the relationships among workplace ostracism, envy, and political behaviour. Based on this review, we can conclude that ostracism develops political behaviour among the employees of an organization through the creation of envy on other employees. It can be concluded that the workplace ostracism creates political behaviour among the employees who have been ostracized at workplaces. In addition to that ostracized employees are supposed to envy other employees based on their perception which may lead to employees behaving with a political agenda within the workplace. This review has proposed a conceptual model which is useful to test the proposed relationships in this review empirically in the future. Our study is a small endeavour to the literature on the workplace ostracism, along with envy and political behaviour. This research fills the gap contextually and will be helpful in examining the validity of model on various context in the world.
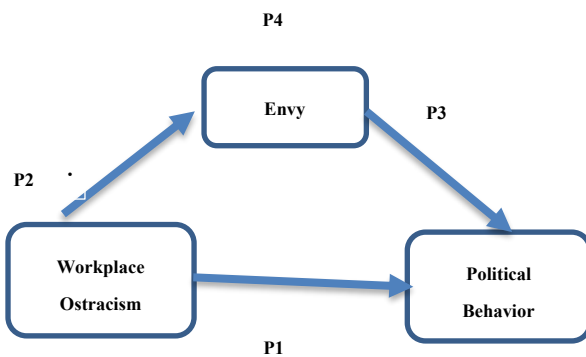

Figure 1: Proposed Framework

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The Moderating Effect of Ethical Leadership on Relationship Between Organizational Politics and Employees' Performance: Systematic Review

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ABSTRACT

The purpose of this review paper explores the adverse impacts of organizational politics on employee performance and examines how ethical leadership can moderate these effects. This review synthesizes findings from various empirical studies and theoretical papers on organizational politics, employee performance, and ethical leadership. This Review aims to figure out the impact of organizational Politics and Employees Performance: Moderating role of Ethical leadership by reviewing existing literature of 15 academic papers. Findings of the review suggest that there is negative relationship between organizational politics and employee's performance. Similarly Ethical Leadership Moderates the relationship between organizational politics and employees' performance. This Leadership of environment can help development of employee's performance in the organizations in reducing negative impacts of organizational policies on employees' performance. In contrast, the leaders who are neglect to confront unethical behaviors and rewards were applied inconsistently may cultivate an environment that encourages organizational political conduct. This study makes a theoretical contribution to understanding the impact of organizational politics on employee performance with moderating effect of ethical leadership. Practically it highlights the need for organizations to prioritize ethical leadership to counteract the detrimental effects of organizational politics. Future studies should investigate the precise mechanisms through which ethical leadership mitigates the effects of organizational politics. Future researchers can do this study as longitudinal studies and that could provide deeper insights into how these dynamics evolve over time.

***Keywords* - Employees' Job Outcomes, Ethical Leadership, Organizational Politics**

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1. INTRODUCTION

According to the Ferris et al., (2018); Vigoda-Gadot, (2007) one of the critical factors that shaping employee behavior and organizational outcomes and also proceedings within an organization to gain power and influence is Organizational politics. The extent to which organizational politics impacts employee performance has garnered significant attention in management literature, particularly in the context of its potential detrimental effects on job satisfaction, engagement, and turnover intentions (Ng & Feldman, 2011; Harris et al., 2014). Organizational politics is an omnipresent element in workplaces that significantly influences employees' job outcomes. Defined as activities undertaken to obtain, engender and use power and other source to get desired consequence (Hochwarter et al., 2010), Furthermore it can have two side of effects on employees and company outcomes. The presence of organizational politics often results in a complex environment where individual interests, power dynamics, and interpersonal relationships intertwine, creating a setting that can profoundly impact job satisfaction, performance, and overall well-being of employees (Vigoda-Gadot & Talmud, 2010).

(Ferris & Kacmar in 1992) stated that, Organizational politics is a common challenge that all organizations encounter, and often leading to adverse effects of both organization and employees as a whole. It is a one of the prominent sources of stress and it can negatively impact on job outcomes. Furthermore, Previous research have indicated that organizational politics can diminish employees' engagement, performance and their satisfaction of the job, all of which are crucial for organizational performance (Kacmar, & Andrews, Harris et al.,2013). Theoretical discussion suggest that organizational politics disrupts organizational processes, reducing performance and productivity at both individual and organizational levels. Many employees view

Organizational politics is negatively, as it is often seen as a means for individuals to enhance and protect their self-interests. But it's the responsivity to organizations to manage political activities to have their positive consequences for their employees through ethical leadership by the manager that may reduce the negative outcomes of organizational politics on employee's performance. Therefore, this moderator i.e. Ethical leadership should not be neglected to acknowledge the impact of organizational politics on employee's performance. That's why this review examines the role of Ethical leadership of managers in moderating the impact of organizational politics on employee's performance.

In moderating the effects of organizational politics on employee's performance, the Leadership style plays a crucial role. Effective leadership can mitigate the negative impacts of politics and enhance positive outcomes by fostering a supportive and transparent environment (Kacmar et al., 2011). Conversely, poor leadership may exacerbate the harmful output of politics, increased stress,

reduced job contentment, and higher turnover intentions among employees (Bodla & Danish, 2013). In recent years, the economic downturn has been frequently attributed to organizations suffering from unethical leadership and behaviors.

Consequently, there has been a heightened focus among both managers and scholars on fostering ethical behavior within organizations. Over the past decade, research has increasingly highlighted the complex interplay between organizational politics and leadership styles, with ethical leadership emerging as a crucial moderator (Resick et al., 2013; Walumbwa et al., 2011). Ethical leadership, characterized by fairness, transparency, and integrity in decision-making, is posited to mitigate the contrast effect of organizational politics on

Employee acrimony and behaviors (Brown & Treviño, 2014; Kalshoven et al., 2011). Prior studies have defined that Moral Leadership as the demonstration of virtue aligned with ethical norms, manifested through relationships and actions of leaders. (Brown et al. 2005). This review develops the mode with moderating variable of ethical leadership through which organizational politics affect employee's performance with negative relationship between organizational politics and employee performance.

While we believe that Ethical leadership moderate the relationship between organizational politics and employee performance. This relationship will differ among individual managers, who have

ability to equipe to handle organizational political environment by playing his ethical leadership among employees. we propose that ethical leadership moderates this relationship by empowering individual managers to comprehend and shape their employee's working environment, and this mitigating the typical adverse effects of organizational politics on employee performance within organization.

In this context, there is a need to explain the relationship among organizational politics and employee performance and also moderating effect of ethical leadership of managers between organizational politics and employee performance theoretically and empirically. The existing literature mainly deals with organizational politics on Job outcomes rather than its relationships with Ethical leadership that could be moderating the relationship between these two variables. Thus, this review focuses on relationship between organizational politics and employee performance and the moderating role of Ethical Leadership. In the existing literature, these relationships are not clearly explored and remained unclear. Therefore, this review fills these relationship gaps in the existing literature.

Hence, the objectives of this review are to synthesize and analyze existing studies that examine the impact of organizational politics on employee performance, focusing specifically on how ethical leadership moderates this relationship based on past literature.

2. REVIEW OF LITERATURE

2.1 Organizational Politics and Employee Performance

Organizational politics is frequently pronounced as self-interested behavior exhibited by employees to attain personal, sometimes to the detriment of organizational objectives. (Vigoda-Gadot, 2010). It encompasses actions like forming alliances, leveraging power, and manipulating situations to one's advantage (Ferris et al., 2019). These political behaviors can create an uncertainty environment and stress, leading to detrimental effects on employee performance. Employees preoccupied with navigating political landscapes are likely to experience job dissatisfaction and lower productivity (Poon, 2013).

Research has consistently shown that intense organizational politics correlate with negative employee outcomes, including increased job dissatisfaction, decreased organizational obligation, and performance (Hochwarter et al., 2020). For instance, a study by Abbas & Raja (2014) demonstrated that perceived organizational politics negatively impacts employee morale and productivity, often leading to increased turnover intentions. This body of evidence suggests that organizational politics poses a significant challenge to maintaining high levels of employee performance. According to (Rosen et al,.2006) a highly political workplace erodes employees believe in the reward system due to perceived uncertainty and injustice. organizational politics is typically seen as counterproductive behavior that distracts employees from their in-role tasks, suggesting a negative relationship between organizational politics and job performance.

However, present experiential findings on this relationship are indecisive. For instance, Hochwarter et al. (2006) found that organizational politics can positively affect job performance. Therefore, direction of this relationship remains unsettled, warring further study without a predetermined hypothesis regarding the association between these variables. Thus, this study focuses this as a gap in the literature and wants to establish a negative relationship between organizational politics and employee's performance. Based on the above cited literature evidences, it can be possible to establish a negative relationship between organizational politics and employee's performance. According to the above literature, this review establishes that organizational politics has a negative relationship with employees' performance as a first hypothesis of this review:

Hypothesis 1: There is a Negative relationship between organizational politics and employee's performance

2.2 The Moderating Role of Ethical Leadership

Leadership plays a crucial effect in shaping how employees perceive and react to organizational politics. Effective leadership can buffer the negative effects of organizational politics and enhance employee performance (Aryee et al., 2012). The negative consequences of organizational politics, scholars have

turned their attention to ethical leadership as a potential buffer. Ethical leaders, by embodying ethical principles in their actions and decisions, create a climate of trust, fairness, and transparency (Brown & Mitchell, 2010; Treviño et al., 2014). Ethical leadership is posited to mitigate the adverse effects of organizational politics on employee performance by fostering a supportive environment where employees feel valued and respected (Den Hartog & Belschak, 2012; Schaubroeck et al., 2012

Brown & Treviño (2006) argue that moral leadership significantly effects follower behavior by setting up and communicating proper values. Leaders are considered ethical when their decisions are made altruistically rather than selfishly (Brown et al., 2005). These leaders handle employees with admiration and consideration, gaining trust by consistently rewarding appropriate behavior and punishing inappropriate actions (Brown et al., 2005). Ethical leaders send clear signals about the acceptability of organizational politics by making equitable judgments and allocating sources based on established policies, thereby demonstrating that their conclusions are not subject to political manipulation. These leaders are likely to feel uncomfortable making decisions that deviate from established policies, as unethical decisions are more noticeable, especially to those adversely affected. consequently, ethical leadership should reduce organizational politics in the workplace.

Conversely, environments led by unethical leaders may prioritize personal gain over organizational interests. employees create assessments regarding their leaders' ethicalness by comparing their actions against moral standards (Tyler, 1986). perception of employees' self-interested behaviors as political, thus feeling justified in making decisions based on political considerations rather than adhering to appropriate norms and guidelines. when organizational political level is high in the organization, employees' performance under guidance of Ethical Leadership manager may not be decrease but overall employees' outcomes may decrease. hypothesis of this review:

Hypothesis 2: Ethical Leadership Moderates the relationship between organizational politics and employees' performance.

3. METHOD

A systematic review of literature was conducted by using the archival method as recommended by Tranfield, D., Denyer, D., & Smart, P. This review process includes classifying the literature from the sources such as journal articles and other research papers relating to the review topic to finding the review. This review considers the research works on 'Organizational Politics', 'Employee performance' and 'Ethical Leadership exist in the literature. This review has used the documentary research method for collecting data because it enabled the researchers to structure research and builds a reliable knowledge base on existing literature in the areas of 'Organizational Politics', 'Employee

performance' and 'Ethical Leadership of managers.

4. DISCUSSION

Basically, this review paper deals with three main concepts. They are organizational politics, Employees performance and Ethical leadership. Based on existing literature, this review establishes the association among these concepts and proposes two hypothesizes. The main objective of Ethical leadership is to shape the organizational politics and develop the employees' performance needed to enhancing a healthy working environment among employees, ultimately achieve the organizational goals. The Ethical leadership of environment can help development of employee's performance in the organizations in reducing negative impacts of organizational policies on employees' performance. with strong moral leaders in workplace are more likely to practice norms and policies and reward ethically. such type of organizations has more chance to retain employees with accountable and consistently apply punishment and discipline.

Organizations that lack of ethical leadership may inadvertently foster a political work environment. Subordinates perceive unethical leaders as risking reduced obligations for positive reciprocity. such as reduced willingness to help and diminished effort toward promotability, due to an increase in organizational politics. Hence based on the review, this paper proposes a conceptual model that shows the impact organizational politics on employees'

performance and moderating role of ethical leadership of managers in organization. (see Fig.1)
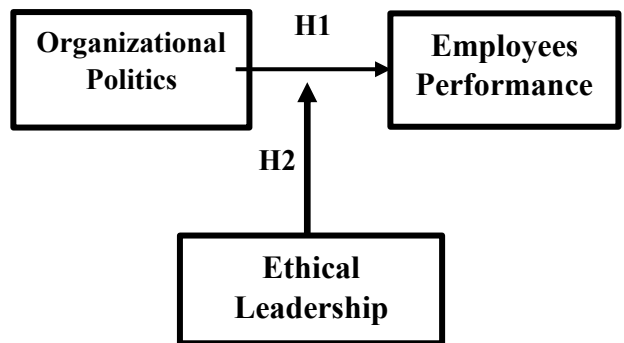
Fig-1: Proposed Hypothesized Mode

5. CONCLUSION

This review explores the impact of Organizational politics on employee performance with moderating effect of Ethical leadership. Based on the findings, it can be concluded that Ethical Leadership can moderating the negative impact of organizational politics on employee performance in organization. In conclusion, while organizational politics often negatively impact employee performance, ethical leadership emerges as a powerful moderating factor that can significantly reduce these adverse effects. By fostering a fair, transparent, and supportive work environment, ethical leaders enhance employee performance and contribute to the overall success of the organization. As such, promoting ethical

leadership should be strategic priority for organizations aiming to mitigate the negative impacts of organizational politics and improve employee outcomes. The review proposes a conceptual model that can be empirically tested in future research to validate these proposed relationships.

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Enhancing Economic Resilience through Integrated Sustainability Strategies in Supply Chains

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ABSTRACT

The incorporation of sustainability techniques into supply chains is imperative in the current global business environment to augment economic resilience. This study has focused on the relationship among sustainability, economic feasibility, and supply chain management, underscoring the significance of comprehensive strategies in reducing risks, promoting creativity, and generating value. The study has emphasized the value of integrated sustainability strategies in supply chains through a qualitative thematic analysis of data collected from eight supply chain and logistics companies in Sri Lanka using a semi-structured questionnaire. The analysis identified four key themes: sustainable logistics and transportation practices, risk mitigation and flexibility, collaborative partnerships for mutual value creation, and innovation and technology adoption. In an ever-changing economy, organizations may contribute to resilience and economic sustainability by implementing integrated sustainability programs. Organizations can also negotiate uncertainty, uphold ethical standards, and give long-term value to stakeholders. Key findings reveal that sustainable practices in logistics and transportation reduce costs, improve efficiency, and mitigate risks, while proactive risk management and collaboration with stakeholders foster resilience to disruptions. Innovation and

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technology adoption further enhances supply chain agility and sustainability, ensuring long-term economic viability. The study has underscored the importance of embracing sustainability principles across supply chains to not only mitigate risks but also drive innovation, competitiveness, and value creation.

The implications of these findings emphasize the necessity for organizations to prioritize sustainability as a core business strategy, aligning it with their economic resilience goals. Future research should explore the challenges of implementing sustainability initiatives in different industries and regions, as well as examine the long-term impact of these practices on economic performance and competitive advantage.

Keywords **– Collaborative Partnerships, Economic Resilience, Risk Mitigation, Supply Chain Management, Sustainability**

1. INTRODUCTION

The terms sustainability, economic resilience, and supply chain management are becoming increasingly important in today's global business environment as key factors influencing the performance of businesses and the advancement of society. Sustainability is the ability to fulfill current demands without compromising the ability of future generations to meet their own needs. It includes social responsibility, economic viability, and environmental care. The ability of an economy, industry, or organization to endure and recover from different shocks and disruptions, on the other hand, is known as economic resilience. This ensures ongoing prosperity and stability.

The foundation of contemporary business is comprised of supply chains, which are complex webs of linked enterprises engaged in the production, distribution, and consumption of products and services. All procedures are included, from locating raw materials to shipping complete goods to customers. Given this, it is now essential for businesses to maintain the best standards, reduce risks, and promote long-term value generation to include sustainability methods in their supply chain management procedures. Reducing negative environmental effects, advancing social justice, and fostering economic growth are the three main goals of sustainability initiatives. Organizations may curb environmental deterioration and improve the health of communities and ecosystems by implementing sustainable practices including resource efficiency, waste reduction, and the use of renewable energy.

In addition, adopting sustainability principles may improve a brand's reputation, draw in eco-aware customers, and provide businesses with a competitive edge. There are several reasons why supply chains must incorporate sustainability measures. First, it synchronizes corporate activities with the changing norms and regulations concerning social responsibility and environmental preservation. Second, it protects company continuity and reputation by reducing risks related to resource shortages, climate change, and stakeholder activism. Thirdly, it encourages creativity and efficiency gains that lead to chances for revenue expansion and expense savings. Lastly, it improves cooperation and stakeholder engagement throughout the supply chain, facilitating group efforts to tackle common sustainability issues. Crucially, the successful application of sustainability methods in supply chains depends on economic resilience. Resilient firms can adjust, bounce back, and prosper in the face of shocks like natural catastrophes, supply chain malfunctions, or economic downturns.

Even in uncertain times, companies that possess economic resilience can preserve ethical standards, carry out sustainable operations, and keep providing value to society and their clientele. Therefore, it is essential to develop strong and sustainable supply chains that can withstand future difficulties and provide long-term value for all stakeholders by strengthening economic resilience through integrated sustainability initiatives.

2. METHODOLOGY AND EXPERIMENTAL DESIGN

2.1 Literature Review

The integration of sustainability strategies within supply chains to strengthen economic resilience has gathered significant attention in contemporary research literature. This synthesis encompasses insights from multiple studies, revealing common themes, key concepts, and divergent viewpoints (Rosič et al., n.d.).

Central to the discourse is the understanding sustainability as a broad idea that includes taking care of the environment, being socially responsible, and ensuring economic stability (Ali et al., n.d.). Literature discusses the importance of considering these dimensions holistically within supply chain management practices to mitigate risks, enhance efficiency, and promote long-term value creation.

In addition to this, several studies have emphasized the role of corporate governance in driving sustainable supply chain practices. For instance, Carter and

Rogers (2008) argue that effective governance structures are crucial in aligning sustainability goals with overall business strategies, thereby ensuring that sustainability initiatives are not merely superficial but are integrated into the core operations of the organization.

A recurring theme across literature is the imperativeness of assessing and mitigating risks associated with global supply chains (Dowse and Blackburn, 2020). Studies emphasize the need for organizations to anticipate and respond to various disruptions, ranging from natural disasters to geopolitical tensions, by fostering resilience through sustainable practices (Miller and Engemann, n.d.). This entails diversifying sourcing strategies, enhancing transparency, and building trust among stakeholders to ensure continuity and stability. Moreover, recent research by Kim et al. (2021) highlights the importance of incorporating sustainability criteria into supplier selection processes, arguing that this not only reduces risks but also promotes ethical sourcing and environmental responsibility across the supply chain. Furthermore, researchers underscore the interplay between sustainability and economic resilience, positing that integrated strategies can mitigate the impact of economic shocks while driving competitive advantage (Rosič

et al., n.d.). By incorporating sustainability principles into decision-making processes, organizations can reduce costs, improve resource efficiency, and enhance brand reputation, thereby strengthening their resilience to market fluctuations and regulatory changes (Ali et al., n.d.).

The role of circular economy principles in enhancing supply chain sustainability has also gained prominence in recent literature. According to Geissdoerfer et al. (2017), transitioning from linear to circular supply chains—where waste is minimized, and resources are continually reused—can significantly enhance economic resilience and reduce environmental impact. This approach is increasingly being recognized as a sustainable alternative to traditional supply chain models.

The literature also highlights the role of technology and innovation in promoting sustainable supply chain practices (Dowse and Blackburn, 2020). From real-time tracking and route optimization to the adoption of green logistics solutions, technological advancements offer opportunities to minimize environmental footprint while enhancing operational efficiency and flexibility. This convergence of sustainability and technological innovation is seen as instrumental in driving systemic change and fostering

adaptive capacity within supply chains (Miller and Engemann, n.d.).

Furthermore, the adoption of digital technologies such as blockchain is being increasingly discussed for its potential to enhance transparency and traceability in supply chains, thereby supporting sustainability objectives (Saberi et al., 2019). Blockchain technology can provide an immutable record of transactions, making it easier to verify the sustainability credentials of products and suppliers.

However, divergent viewpoints emerge regarding the challenges and trade-offs associated with sustainability integration. While some scholars emphasize the potential benefits of cost savings (Rosič, n.d.), improved reputation, and market competitiveness (Rosič et al., n.d.), others caution against overlooking the complexities and uncertainties inherent in sustainability initiatives. Concerns are raised regarding the trade-offs between short-term profitability and long-term sustainability goals, as well as the need for comprehensive risk management strategies to navigate evolving regulatory landscapes and stakeholder expectations.

In conclusion, literature underscores the importance of integrating sustainability strategies within supply chains to enhance economic resilience. By embracing a holistic approach that considers environmental, social, and economic dimensions, organizations can mitigate risks, drive innovation, and create value in an increasingly interconnected and uncertain business environment. However, achieving this integration requires concerted efforts to address challenges, foster collaboration, and merge sustainability principles into core business practices.

2.2 Data Collection and Methodology

Data collection for this study was done in the context of eight supply chain and logistics companies located in Sri Lanka. Nine questions on a semi-structured questionnaire were given to these businesses. Thematic analysis was the methodological framework used for analysis once the responses were retrieved. After making this methodological decision, the data was cleaned up and encoded. Four distinct themes emerged from the data, and they became the focus of the following analytical steps. These issues were examined in detail through systematic analysis, which produced relevant conclusions and subsequent interpretations.

3. RESULTS

3.1 Theme 1: Sustainable Logistics and Transportation Practices

Sustainable logistics and transportation practices play a crucial role in enhancing economic resilience within supply chains by reducing costs, improving efficiency, and mitigating risks associated with traditional transportation methods. The integration of sustainable practices in logistics and transportation not only contributes to environmental sustainability but also fosters economic resilience through various strategies and initiatives.

One key aspect highlighted by the organizations is the importance of optimizing transportation routes to minimize fuel costs and enhance supply chain flexibility. By leveraging technology for real-time tracking and route optimization, organizations can lower transportation expenses while improving delivery times and overall operational efficiency. This approach not only reduces operational costs but also enhances the organization's ability to respond to changing market conditions and disruptions, thus contributing to economic resilience. Furthermore, the adoption of fuel-efficient vehicles is emphasized as a sustainable practice that can significantly reduce emissions, lower operating costs, and enhance customer satisfaction. By investing in green logistics solutions and transitioning to eco-friendly transportation options, organizations not only can

minimize their carbon footprint but also cut costs and improve their competitiveness in the market, ultimately reinforcing economic resilience.

Another critical aspect of sustainable logistics and transportation practices highlighted by the organizations is the adoption of consolidation and modal shift strategies to mitigate risks associated with fuel price volatility and regulatory changes. By consolidating shipments and shifting to more sustainable modes of transportation, organizations can reduce their reliance on fossil fuels, lower transportation-related emissions, and enhance supply chain sustainability. This proactive approach not only contributes to environmental conservation but also ensures economic resilience by reducing the impact of external factors on transportation costs and operations. Moreover, sustainable logistics practices are shown to optimize resource use, minimize waste, and enhance operational efficiency within supply chains. By focusing on waste reduction, efficient resource utilization, and operational optimization, organizations not only can improve their environmental footprint but also strengthen their economic resilience by streamlining processes, reducing costs, and enhancing overall supply chain performance.

3.2 Theme 2: Risk Mitigation and Flexibility

Risk mitigation and flexibility are critical components of supply chain management that are intricately linked to economic resilience. By addressing potential risks, fostering collaboration, and enhancing operational flexibility, organizations can strengthen their ability to adapt to challenges, minimize disruptions, and sustain long-term economic viability. Effective risk management practices, such as scenario planning and supply chain mapping, play a vital role in anticipating and mitigating sustainability-related risks, ultimately enhancing economic resilience. By proactively identifying vulnerabilities and developing contingency plans, organizations can minimize the impact of disruptions, maintain operational continuity, and safeguard their financial stability in the face of uncertainties.

Building trust and collaboration across the supply chain through transparent communication and stakeholder engagement is essential for aligning sustainability goals and driving collective action. By fostering strong relationships with suppliers, customers, and other stakeholders, organizations can enhance visibility, promote information sharing, and build resilience through collaborative risk mitigation strategies, thereby

contributing to economic sustainability. Investing in innovation and technology is another key aspect highlighted by logistics companies for enhancing supply chain visibility and responsiveness, which in turn supports economic resilience. By leveraging digital platforms, analytics tools, and automation technologies, organizations can gain real-time insights into their operations, identify potential risks, and adapt quickly to changing market conditions, thus improving their ability to maintain economic resilience in the face of uncertainties.

Creating incentives and recognition programs for sustainability performance can motivate employees and suppliers to prioritize sustainability, thereby enhancing risk mitigation and flexibility within the supply chain. By aligning incentives with sustainability goals, organizations can drive behavior change, encourage innovation, and build a culture of continuous improvement that supports economic resilience in the long run. Establishing partnerships with suppliers, customers, and other stakeholders based on shared values and objectives is crucial for enhancing risk mitigation and flexibility. By collaborating with partners who share a commitment to sustainability, organizations can amplify the impact of their initiatives, drive systemic change,

and build a more resilient supply chain that can adapt to evolving market conditions and challenges, ultimately contributing to economic sustainability.

3.3 Theme 3: Collaborative Partnerships for Mutual Value Creation

Collaborative partnerships play a pivotal role in supply chain management, fostering mutual value creation and enhancing economic resilience. By working closely with suppliers, customers, and other stakeholders, organizations can drive innovation, improve efficiency, and build a more resilient supply chain that can adapt to changing market dynamics and uncertainties.

One key aspect highlighted by logistics and supply chain companies is the importance of collaborative partnerships in aligning sustainability goals and promoting economic resilience. By fostering transparency, sharing best practices, and jointly investing in sustainable initiatives, organizations can build strong relationships with their partners, enhance supply chain visibility, and drive collective action towards sustainability, ultimately contributing to long-term economic sustainability. Strategic partnerships and co-creation of sustainability roadmaps are essential for

aligning objectives with suppliers and customers, driving mutual value creation, and enhancing economic resilience. By collaborating on shared goals, organizations can leverage the expertise and resources of their partners, drive innovation, and create synergies that benefit all parties involved, ultimately strengthening the resilience of the supply chain.

Collaboration platforms that facilitate data exchange, performance tracking, and joint innovation are instrumental in reinforcing economic resilience through collaborative partnerships. By leveraging technology to streamline communication and collaboration with suppliers and customers, organizations can enhance visibility, agility, and responsiveness in their supply chain operations, thereby improving their ability to adapt to disruptions and uncertainties. Incentivizing sustainable behavior through contracts, performance-based incentives, and shared risk-sharing mechanisms is crucial for ensuring alignment of sustainability goals and economic objectives in collaborative partnerships. By rewarding sustainability performance and fostering a culture of responsibility and accountability among partners, organizations can drive continuous improvement, innovation, and resilience in

their supply chain operations, ultimately contributing to economic sustainability.

Joint audits, risk assessments, and mitigation strategies conducted in collaboration with suppliers and customers can enhance supply chain resilience and economic sustainability. By proactively identifying and addressing environmental and social risks in partnership with stakeholders, organizations can build a more robust supply chain that is better equipped to withstand disruptions, protect reputation, and maintain long-term economic viability.

3.4 Theme 4: Innovation and Technology Adoption

Innovation and technology adoption are key drivers of economic resilience in supply chain management. By embracing new technologies, fostering a culture of innovation, and leveraging digital solutions, organizations can enhance efficiency, agility, and sustainability, ultimately strengthening their ability to adapt to disruptions and thrive in a rapidly changing business environment.

One critical aspect highlighted by the organizations is the role of innovation in addressing sustainability challenges while maintaining economic stability. Organizations that adopt innovative solutions, such as predictive analytics for

inventory optimization or closed-loop recycling systems, can achieve cost savings, improve sustainability performance, and enhance economic resilience by reducing waste, conserving resources, and optimizing operations. Collaborative innovation is another key theme that intersects with innovation and technology adoption in supply chain management. By fostering partnerships with diverse stakeholders, including suppliers, customers, and research institutions, organizations can co-create sustainable technologies, processes, and business models that drive innovation and contribute to economic resilience through shared knowledge, expertise, and resources.

Technology adoption, such as digital platforms, analytics tools, and automation solutions, is essential for enhancing supply chain visibility, responsiveness, and efficiency, thereby supporting economic resilience. By leveraging data-driven insights, real-time monitoring, and predictive capabilities, organizations can identify risks, optimize operations, and make informed decisions that strengthen their ability to adapt to market fluctuations, disruptions, and uncertainties. Innovations for integrating sustainability and economic resilience, such as blockchain-based transparency platforms

or smart packaging solutions with IoT sensors, can enhance supply chain traceability, efficiency, and sustainability. By leveraging technology to track product provenance, monitor environmental conditions, and reduce waste, organizations can improve operational transparency, mitigate risks, and drive sustainable practices that contribute to long-term economic viability.

Renewable energy technologies, circular economy business models, and eco-design principles are examples of innovative solutions that organizations can adopt to reduce environmental impact, enhance resource efficiency, and promote economic resilience. By embracing sustainable innovations, organizations can reduce costs, minimize waste, and create new revenue streams that support long-term economic sustainability while contributing to environmental stewardship and social responsibility.

4. DISCUSSION AND CONCLUSION

Sustainable logistics and transportation practices, risk mitigation strategies, collaborative partnerships, and innovation and technology adoption were all identified as vital components for enhancing economic resilience in supply chains. By integrating sustainable initiatives such as route optimization, fuel-efficient vehicles, consolidation strategies, and resource optimization, organizations can simultaneously reduce costs, improve efficiency, and mitigate risks associated with traditional transportation methods. Proactive risk management, collaboration, technological investments, sustainability incentives, and strategic partnerships further strengthen resilience by enabling organizations to navigate uncertainties and disruptions effectively. Moreover, fostering transparency, sharing best practices, leveraging technology, incentivizing sustainability, and conducting joint risk assessments in collaborative partnerships facilitate mutual value creation and innovation within supply chains. Embracing innovative solutions, leveraging technology, and integrating sustainability principles enhance efficiency, agility, and sustainability, thereby reinforcing organizations' ability to adapt to challenges and uncertainties. Therefore, as research findings were uncovered that by embracing these comprehensive strategies, organizations can drive long-term success and economic sustainability in today's dynamic and competitive business environment.

In addition to the four themes identified, the study further emphasizes the challenges and tradeoffs that organizations could encounter

when integrating sustainable practices into their supply chains. Although the benefits of sustainable practices are clear, the study also highlights the significance of addressing the complexities involved with maintaining the balance between short-term profitability and long-term sustainability goals. According to the findings of the study, it is extremely imperative that organizations carefully study these challenges and tradeoffs when developing a holistic strategy for integrating sustainable practices into the core business practices in order to survive and thrive in the long run. The findings of the study have been confirmed by existing literature which suggest that addressing the aforementioned tradeoffs plays a significant role in ensuring the economic resilience of organizations.

5. SUGGESTIONS FOR FUTURE RESEARCH

Future research should focus further on several aspects to enhance the understanding and implementation of sustainability practices within supply chains. Firstly, exploring the challenges and barriers specific to different industries and regions would provide critical insights into the practicalities of sustainability integration. Industries such as manufacturing, agriculture, and retail may face distinct challenges due to varying supply chain structures, resource dependencies, and regulatory landscapes. Understanding these differences can inform tailored strategies that optimize sustainability impacts while mitigating sector-specific risks.

Moreover, longitudinal studies are essential to assess the long-term impacts of sustainability initiatives on economic performance and competitive advantage. Tracking key performance indicators (KPIs) over extended periods can reveal trends, identify success factors, and validate the sustainability-business case. Such studies could encompass financial metrics (cost savings, revenue growth), operational efficiencies (resource utilization, waste reduction), and intangible benefits (brand reputation, stakeholder trust).

Additionally, comparative studies across different countries or regions could highlight contextual factors influencing the adoption and effectiveness of sustainability practices. Cultural norms, regulatory frameworks, infrastructure capabilities, and market dynamics vary significantly globally, impacting the feasibility and outcomes of sustainability initiatives. Cross-national comparisons can yield valuable lessons and best practices transferable across borders, facilitating global sustainability advancements in supply chain management.

Furthermore, investigating the role of government policies and incentives in promoting sustainable supply chain practices is crucial. Policy interventions, such as carbon pricing, subsidies for renewable energy adoption, and regulatory frameworks promoting circular economy principles, can significantly influence organizational behaviors and investment decisions. Analyzing case studies of policy-driven sustainability initiatives and their impacts on supply chain resilience would provide empirical evidence supporting policy advocacy and strategic alignment.

Advancing interdisciplinary collaboration between academia, industry, and policymakers is essential for accelerating sustainable supply chain innovations. Collaborative research initiatives can bridge knowledge gaps, foster technology transfer, and co-create solutions tailored to real-world challenges. Engaging diverse stakeholders in research partnerships promotes knowledge exchange, enhances implementation capacities, and catalyzes systemic changes towards sustainable development goals.

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ACKNOWLEDGEMENT

Factors Affecting Retention Intention of Senior Software Engineers in Selected Software Development Firms in Western Province, Sri Lanka

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ABSTRACT

One of the main challenges encountered by knowledge-intensive firms such as software development companies that employ a large percentage of highly qualified professionals is high employee turnover. More particularly, in the Asian context, especially in Sri Lanka, employee turnover in the IT industry has been observed as a critical problem. This study attempts to determine how selected employee retention factors promote the retention of Senior Back-End Software Engineers within software development companies in the Western Province of Sri Lanka.

The study's primary source of input was a self-administered questionnaire and semi-structured interviews, and the researcher was able to compile responses from a total of 253 Senior Back End Software Engineers and conduct semi-structured interviews with 02 Human Resource professionals of

reputed software development companies in the Western Province of Sri Lanka. A thorough statistical analysis was carried out by the researcher using the SPSS program. Descriptive statistics, correlation, and multiple regression analysis were carried out after determining the scale's validity and reliability. In order to assess the association between the identified Independent variables and the turnover the Pearson Product Moment Correlation Coefficient was performed. Also, a thematic analysis was performed with the intention of organizing the collected data into themes and generating conclusions.

The results of the findings of the study will definitely have an impact on every software development company operating in the Western Province of Sri Lanka. the findings are also deemed to be helpful for managers and Human Resource professionals in developing employee retention strategies and practices within software development.

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1. INTRODUCTION

1.1 Background of the problem

It is no secret that with the dawn of the information era, knowledge workers are in the spotlight of skill and knowledge-based organizations since they are distinguished not only by their higher levels of education but also by their outstanding interpersonal skills, communication skills, and information processing abilities. Since skill and knowledge-based organizations are aware that the knowledge workers possess the highest level of competitive advantage, their emphasis has shifted away from physical capital and toward human capital. To be more precise, towards knowledge workers (Jayasinghe, 2020). In software development companies, knowledge workers such as Back-End Software Engineers are considered one of the greatest assets and are essential in achieving improved performance since they solve intriguing issues like scalability and performance and thereby steer the organizations and their operations in the right direction to accomplish organizational goals. To elucidate further, Back-End Software Engineers are responsible for designing, constructing, and most importantly, maintaining the server side of web applications. In other words, their primary responsibility is to create the frameworks of software applications (DistantJob, 2021). However, it is a sad fact

that employee retention is one of the greatest challenges experienced by software development companies and the rise in employee turnover has a significant impact on the business operations of those companies (Kamloonwesaruch et al., 2022).

The results of the National IT-BPM Workforce Survey carried out in 2019 by the Information and Communication Technology Agency of Sri Lanka, brought to light that the IT workforce of Sri Lanka is undergoing significant structural changes with heavy investments of software giants in the world (Binushika & Karandakatiya, 2020). According to the Sri Lanka Export Development Board, since the late 1990s, more than 180 software development companies have been operating in Sri Lanka, and many more will soon commence their operations since at present, the software development sector focuses not only on catering the regional or the local markets but also the international markets. Moreover, it is apparent that the majority of recent IT developments have primarily been established and taken place on the outskirts of Colombo. Virtusa, WSO2, Millennium IT, and Pearson Lanka are a few of the many such developments in the industry (Binushika & Karandakatiya, 2020). In addition, as per the Information & Communications Technology (ICT) Manpower Study conducted in 1999, 43.6% of IT professionals are employed by software development organizations and the annual growth rate of the software development workforce is 14.7%.

Conversely, the IT industry exhibits a noticeable trend in employee turnover both in Sri Lankan and global contexts since it is

quite challenging to retain employees. And when there is a greater-than-average rate of employee turnover in the industry, employee retention is considered a serious concern. Hence, employee retention is one of the biggest problems the IT industry is now facing. Nevertheless, the outburst of the concept of employee turnover has given IT companies a fresh outlook on how to keep their best talent on staff rather than lose them to competitors (Binushika & Karandakatiya, 2020).

When staff turnover is high, a company's priority should be to retain the current workforce. As a result, the Software Development companies have set their sights on recruiting capable Software Engineers and they compete with one another for the best employees by promising them better opportunities in terms of pay, experience, and working conditions (Jinadasa & Wickramasinghe, 2005).

According to Amunugama, (2014), due to the fierce competition for talent in Sri Lanka's current tight labor market, businesses are focusing more on how to keep their best employees rather than having to invest in expensive replacement and retraining (Karunathilaka et al., 2016). Hence, employee retention is considered to be one of the predominant challenges in the fields of human resource management and talent management (Karunathilaka et al., 2016). The current state of globalization has made it more difficult to carry out Human Resources functions within organizations. To be competitive, organizations must not only recruit the most talented individuals but also, they must focus on retaining them and

keeping them working for the company for an extended period (Mahadi et al., 2020).

The research is conducted to obtain a modern-day outlook on the effect of annual reward programs and performance-based bonuses, career development opportunities, and work environment on employee retention.

1.2 Problem statement

Many Organizations at present, frequently struggle with the issue of growing employee turnover (Suraihi et al., 2021). Finding and retaining skilled people is of utmost importance since employee knowledge and experience are critical to an organization's ability to compete economically (Balaji et al., 2017).

Studies that have been conducted regarding employee retention emphasize that the actual reasons why people leave organizations are complex and typically related to pressures at work. Also, those studies highlight that employee retention within organizations is influenced by several components, including reward programs, training opportunities, career development opportunities, and work environment. Thus, organizations must work hard toward employee retention to avoid losing their finest employees. Unlike before, employees nowadays have numerous opportunities. Consequently, if they are not satisfied and content at work, they will seek employment elsewhere (Zainal et al., 2022).

According to recent data by SLASSCOM, the IT industry in Sri Lanka has observed a significant turnover rate, particularly among experienced software engineers, which

presents challenges for retaining skilled professionals (SLASSCOM, 2021). High turnover impacts business continuity and growth, making it crucial to understand what influences the retention intentions of senior software engineers. Since Software Development companies cannot prevent the Senior Back-End Software Engineers from seeking more beneficial opportunities, the employee retention strategies implemented by the companies should aim on enhancing employee loyalty. Development and implementation of conventional Human R strategies and practices are no longer effective nor sufficient to retain competent Senior Back-End Software Engineers due to the pressure of competitiveness in the Software Development sector. This forces the Software Development companies in the industry to develop strategies that are more adaptable, accommodating, and cooperative. The purposes served by the employee retention strategies are primarily two-fold: one is to lower employee turnover while the other is to significantly lower the costs involved with hiring, training, and onboarding new hires (Khalid & Nawab, 2023).

To comprehend the employee retention patterns of Software Development Companies, it is crucial to investigate the retention issues persisting in companies. Different Human Resources initiatives implemented by organizations should also be essentially looked into because those initiatives play a primary role in ensuring that employees are content and happy at work and thereby directly affect employee retention within companies (Wijesiri et al., 2018).

The findings of the research help the companies operating in the Software Development sector to formulate and establish employee retention strategies that will help them to retain their talented and skilled Senior Back-End Software Engineers within their teams. Hence, the specific problem statement of this study is the "Perceived influences of different employee retention factors on the retention of Senior Back-End Software Engineers in software development companies: with special reference to the software development companies in the Western Province of Sri Lanka".

1.3 Research Questions

In organizations that specialize in software development, the greatest assets are their employees and their implicit knowledge. Due to the willingness and tendency of Software Engineers to switch employers for a variety of favorable reasons, software development companies are highly dependent on such competent employees. The research seeks to bring positive impacts to software development companies by addressing the below research questions:

What is the relationship between annual reward programs and retention intention of Senior Software Engineers in the Western Province software firms?

How do career development opportunities influence the retention intention of senior engineers in these firms?

What aspects of the work environment impact the retention intention of senior engineers in these firms?

1.5 Research objective/s

01. In organizations that specialize in software development, the greatest assets are their employees and their implicit knowledge. Due to the willingness and tendency of Software Engineers to switch employers for a variety of favorable reasons, software development companies are highly dependent on such competent employees. The research seeks to bring positive impacts to software development companies by addressing the below research questions:

02. What is the relationship between annual reward programs and retention intention of Senior Software Engineers in the Western Province software firms?

03. How do career development opportunities influence the retention intention of senior engineers in these firms?

04. What aspects of the work environment impact the retention intention of senior engineers in these firms?

1.5 Significance of the study

To reduce employee turnover, Software Development Companies must look into both employee retention and turnover concerns. The results of this study are believed to be helpful to software development companies in developing fully integrated retention strategies. More deliberately, the findings of the research contribute to a better comprehension of managing Human Resources strategies and practices by taking into account multiple employee retention concerns and factors along with the characteristics and patterns of employee retention in Software Development companies in the Western Province of Sri Lanka.

As a developing country with a high workforce, employee retention is the center of attention of many researchers. Since there are currently few studies on staff retention in software development companies in the Western Province of Sri Lanka, finding answers to the earlier-mentioned research questions is crucial. Even though this topic has been the subject of numerous research that has been conducted around the world over the years due to the fact that maintaining employee retention is crucial to the efficient operation of the business process as well as to the long-term profitability of the organizations, only a limited number of research focus on the Sri Lankan context. As a result, there is less information and knowledge on how employee retention factors including, annual reward programs and performance-based bonuses, career development opportunities, and work environment affect the employee intention to remain in the Software Development companies in the Western Province of Sri Lanka. The study addresses the emerging challenges related to employee turnover and bridges the existing knowledge gap in Sri Lankan literature by examining the perceptions of Senior Back-End Software Engineers.

Referring to this study will aid organizations and individuals to gain a better grasp of published articles and become more familiar with qualitative and quantitative data. Specifically, the study will serve as a manual for Software Development companies to formulate useful solutions or strategies for

the problems that arise in the process of reducing employee turnover and will potentially lay the groundwork for further research that will be carried out in this field to cover broader topics..

1.6 Scope of the study

It is proven that annual reward programs and performance-based bonuses, career development opportunities, and internal work environment are the primarily most significant elements that affect employee retention and lowers employee retention rates. There are numerous corresponding research that have concentrated on each independent variable and how it relates to the dependent variable.

When the fundamental literature on employee retention of software development companies is closely examined, it was clear that there is not enough practitioner and academic literature, and the accessible information is typically dispersed. Moreover, the research done in the past is contrary to the modern-day strategies required to address the pain points in employee retention. The main aim of the study is to make novel theoretical contributions through the examination of the reciprocal process between employee and employer and their implications on employee retention.

The study primarily focuses on Software Development companies, where technically competent and trained Senior Back-End Software Engineers are recognized as one of the key drivers of Software Development companies. Typically, an early career Senior Software Engineer possesses experience of 1-4 years, a mid-career Senior Software

Engineer holds 5-9 years of experience while a well-experienced Senior Software Engineer should possess experience over 10-19 years (Payscale, n.d.).

The challenges and pressures of competitiveness in the globally shifting marketplaces are nerve-wracking and very intense, forcing organizations to develop ways to be more adaptable, accommodating, and cooperative (Park et al., 2010). On account of this, the results of the study are believed to be helpful to the software development companies operating in the Western Province of Sri Lanka in developing fully integrated retention strategies. Aside from that, the researcher also believes that this study will steer development pathway towards the Sustainable Development Goal, 'Decent work and economic growth'..

2. METHODOLOGY AND EXPERIMENTAL DESIGN

2.1 Research Design

The goal of the study was to test the hypothesis and examine the determine and clarify the relationship between employee retention and employee retention factors including, annual reward programs and performance-based bonuses, career development opportunities, and internal work environment. According to Aman-Ullah et al. (2020), SET is the theory that is most frequently applied to gain a deeper understanding of employee retention. Hence, the Social Exchange Theory (SET) acts as the theoretical cornerstone of this study. The researcher started the study with an appealing social theory and has moved

from a more general to a more detailed level. Ergo, as per the procedures and general assumptions, the researcher used the deductive approach for the study.

A mixed strategy that incorporates both qualitative and quantitative methodologies was employed by the researcher as an effort to better comprehend the employee retention factors that have an impact on the employee retention patterns of the Senior Back-End Software Engineers in software development companies that are operated in the Western Province of Sri Lanka. Thus, the quantitative and qualitative data were gathered and analyzed.

Multiple methods were used to gather data, including semi-structured interviews and surveys or questionnaires. To be more precise, for the quantitative research component of the study, a self-administered, structured questionnaire was used whilst semi-structured and in-depth interviews with Human Resource professionals were carried out to satisfy the quantitative component. The previously conducted studies and the research hypotheses served as the foundation for the questionnaire development.

Considering the goal of this study is to address the issue of talent turnover in software development companies in the Western Province of Sri Lanka, the researcher limited the sample by distributing questionnaires solely to IT professionals. Specifically, Senior Back-End Software Engineers of renowned software development companies in the Western Province of Sri Lanka. Further, semi-structured interviews were also conducted with Human Resources professionals to gather data. As a result of the research topic's uniqueness, there were very few candidates who could offer insightful contributions based on their knowledge and experience. Subsequently, the researcher was able to conduct interviews only with a limited number of candidates.

In closing, the researcher used MS Excel for simple statistical analyses such as those examining demographic information and other patterns while SPPS was used for detailed statistical analysis.

2.2 Conceptual Diagram

To achieve the research objectives and answer the research questions, the researcher created a conceptual framework that is purely determined by the literature that was accessible on the subject under consideration. Accordingly, the employee retention factors, such as annual reward programs and performance-based bonuses, career development opportunities, and internal work environment, serve as the independent variables while Retention intention serves as the dependent variable of the study. Considering the nature of the mixed approach used for the study, the researcher is well aware that the primary conceptual framework may need to be modified in light of research findings.
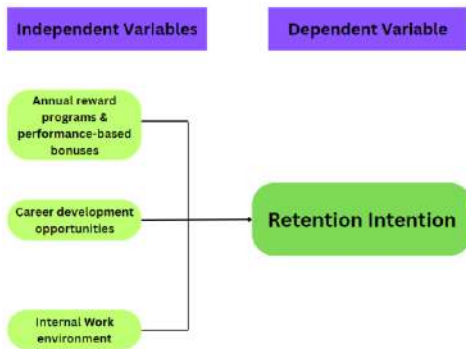
Figure 1 Conceptual Diagram

2.3 Population and Study Sample

As the first step of measuring and analyzing the study's targeted sample, the researcher made certain of the target population, who are the employees working in the software development companies in the Western Province of Sri Lanka. The researcher relied on the software development companies that are approved and included Sri Lanka Export Development Board's website since it provides a strong foundation for a homogeneous sample. The executive and managerial level employees who are employed as Senior Back-End Software Engineers in software development companies operating in the Western Province of Sri Lanka constituted the sample frame of the study.

2.4 Sample Size and Selection of Sample

The population for this study, totaling 738 Senior Software Engineers, is derived from data on software firms listed by the Sri Lanka Export Development Board, which includes companies within the Western Province operating under the software development industry. With overall 738

Senior Back-End Software Engineers from software development companies in the Western Province of Sri Lanka, the researcher found it challenging to conduct the study for the entire population. Hence, utilizing Morgan's table the researcher has chosen 253 Senior Back-End Software Engineers as a valid, reliable, and accurate sample for the study.

$$\frac{Z2^{*} (p)^{*(1-p)}}{c2}$$

⟩ Z = Z value (1.96 for 95% confidence level)

⟩ p = Percentage picking a choice, expressed as decimal (.5 used for sample size needed)

⟩ c = confidence interval, expressed as decimal

The above calculation clearly validates that the researcher has to collect feedback from only 253 respondents given that the confidence level is 95%, the margin of error is 05, the population proportion is 50% and the population size is 738. It is safe to say that the sample size is sufficient, and the findings based on this sample can be used with confidence.

Further, a probability sampling technique known as simple random sampling that relies on the researcher's ability to choose and evaluate sampling units at random was used to select the sampling units since the researcher believed that it would allow a wide representation from a wide range of levels, backgrounds, genders, and age groups and geographical areas. Accordingly, every component of the population shares similar characteristics and is considered to

have an equal chance to be selected and included in the sample of the study.

2.5 Sources of Data

The study utilized both primary and secondary data to analyze variables related to employee retention in software development companies in Sri Lanka's Western Province. Primary data was collected through a structured questionnaire with close-ended questions and semi-structured interviews. The questionnaire, which included a demographic section and a section based on a five-point Likert scale, aimed to measure the impact of annual reward programs, career development opportunities, and the internal work environment on employee retention. Semi-structured interviews with HR professionals provided deeper, subjective insights. Secondary data from publicly available sources, including research papers, journals, industry reports, company publications, and online platforms like LinkedIn and the Sri Lanka Export Development Board's website, further supported the study. These secondary sources, published by external parties, added additional context and validation to the findings.

2.6 Collection of Data

Data collection for the study took place over four weeks starting in early August 2023 and required procedural adjustments due to the legal and financial concerns of software development companies. To ensure data security and prompt responses, the structured questionnaire was distributed via Google Forms through LinkedIn, WhatsApp, and Email, accompanied by a cover letter explaining the research goals and promising respondent confidentiality to encourage honest feedback. Initially, participants were chosen randomly, but due to time constraints, the snowball sampling method was used, where respondents suggested additional participants. By the end of August, all collected responses were included in the analysis.

Additionally, two in-depth, semi-structured interviews were conducted with HR professionals who had extensive knowledge of employee retention patterns in software development companies. These interviews aimed to provide insights into enhancing retention strategies and were conducted via MS Teams to facilitate quick access and encourage open discussions. The limited number of interviewees allowed for a deeper understanding of detailed feedback.

2.7 Data Analysis Strategies

The SPSS, statistical data analysis package version 20.0 was used by the researcher to conduct the data analysis and hypotheses testing.

3. RESULTS AND DISCUSSION

3.1 Introduction to the Chapter

This chapter presents both quantitative and qualitative interpretations of survey data, utilizing SPSS to evaluate validity and reliability. It includes demographic analysis, descriptive statistics, and correlation analysis to assess how independent factors influence employee retention.

3.2 Analysis of Demographic Factors

3.2.1 Age Group

The majority (60.1%) of respondents are aged 20-29, with 23.3% in the 30-39 range, and 8.3% each above 50 and below 20. This indicates a youthful workforce among senior back-end software engineers.

3.2.2 Educational Level

Most respondents (58.9%) have postgraduate degrees, 30.4% hold bachelor's degrees, and only 1.2% lack formal education. This suggests a high level of education influencing retention perspectives.

3.2.3 Length of Service in Current Organization

A significant 88.5% have been with their organization for 3-5 years, indicating stable employment histories which may affect retention.

3.2.4 Current Position

63.2% hold middle management roles, 19% are in senior management, and 10.7% are interns. This diversity reflects various levels of experience impacting retention factors.

3.3 Descriptive Analysis

Survey responses were measured on a five-point Likert scale, revealing general consensus on independent variables.

3.3.1 Descriptive Analysis for the Independent Variables

Reward and Compensation

Mean: 4.17, indicating positive perceptions of compensation, with moderate consensus among respondents

Career Development Opportunities

Mean: 4.24, showing favorable views on career growth, with slight preference for higher ratings.

Internal Work Environment

Mean: 4.10, indicating positive perceptions of the work environment, suggesting a favorable atmosphere for retention.

3.4 Hypothesis Testing

Three hypotheses were tested using SPSS for correlation and regression analysis.

H1: There is a relationship between annual reward programs and performance-based bonuses and the intention of Senior Back-End Software Engineers to retain in the software development companies in the Western Province of Sri Lanka

Strong positive correlation (0.822) between "Reward Compensation" and "Employee Retention," indicating well-rewarded employees are more likely to stay.

H2: There is a relationship between career development opportunities and the intention of Senior Back-End Software Engineers to retain in the software development companies in the Western Province of Sri Lanka

Significant correlation (0.660) between "Career Development Opportunities" and "Employee Retention," emphasizing that perceived growth opportunities enhance retention likelihood.

H3: There is a relationship between the work environment and the intention of Senior Back-End Software Engineers to retain in the software development companies in the Western Province of Sri Lanka.

Strong correlation (0.747) between "Internal Work Environment" and "Employee Retention," highlighting that a supportive work environment improves retention.

4. CONCLUSION

This research highlights key factors influencing the retention of Senior Back-End Software Engineers in software development companies in the Western Province of Sri Lanka. Three primary factors—annual reward programs, career development opportunities, and work environment—significantly correlate with the engineers' intention to stay.

The findings emphasize that competitive remuneration, including performance-based bonuses, is crucial for retaining senior technical talent, aligning with Smith et al. (2017) and Chen & Huang (2018). Additionally, opportunities for career growth, as supported by Khan et al. (2019) and Lee et al. (2020), are vital for retention. A positive work environment characterized by collaboration and effective communication also enhances retention intentions, corroborating insights from Robbins et al. (2016) and Guchait et al. (2018).

Organizations that invest strategically in these areas can strengthen their competitive advantage in the IT sector. This study lays the groundwork for further exploration of tailored retention strategies specific to the senior back-end engineering workforce, emphasizing the need for continuous adaptation and refinement of these initiatives.

Table 1 Test of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
REWARD_COMPENSATION	.297	253	.000	.784	253	.000
CARRER_DEVELOPMENT_OPPUTUNITIES	.164	253	.000	.914	253	.000
INTERNAL_WORK_ENVIRONMENT	.216	253	.000	.934	253	.000

Table 5 Correlation - (SPSS) Output for H1

Correlations		EMPLOYEE RETENTION	REWARD COMPENSATION	CARRER DEVELOPMENT OPPORTUNITIES
REWARD COMPENSATION	Pearson Correlation	.822**	1	.497**
	Sig. (2-tailed)	0		0
	N	253	253	253

Table 4 Correlation - (SPSS) Output for H2

Correlations		EMPLOYEE RETENTION	REWARD COMPENSATION	CARRER DEVELOPMENT OPPORTUNITIES
CARRER DEVELOPMENT OPPORTUNITIES	Pearson Correlation	.660**	.497**	1
	Sig. (2-tailed)	0	0	
	N	253	253	253

Table 3 Correlation - (SPSS) Output for H3

Correlations		EMPLOYEE RETENTION	REWARD COMPENSATION	CARRER DEVELOPMENT OPPORTUNITIES
INTERNAL WORK ENVIRONMENT	Pearson Correlation	.747**	.540**	.667**
	Sig. (2-tailed)	0	0	0
	N	253	253	253

Table 2 Model Summary (SPSS) output

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.904[a]	.817	.815	.229400	2.100
A. Predictors: (Constant), Internal Work Environment, Reward Compensation, Career Development Opportunities					
B. Dependent Variable: Employee Retention					

Table 7 ANOVA Test from SPSS

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	58.673	3	19.558	371.646	.000[b]
	Residual	13.103	249	.053		
	Total	71.776	252			

Table 6 Multiple Regression Coefficient (SPSS Output)

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.161	.126		1.281	.201
	Reward Compensation	.464	.027	.561	17.020	.000
	Career Development Opportunities	.148	.036	.153	4.107	.000
	Internal Work Environment	.341	.038	.342	8.896	.000

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Beyond Browsing: Examining the Digital Experience that Drive Students' Digital Literacy

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Abstract

As digital technology continues to transform educational environments, fostering digital literacy among students has become increasingly essential. This paper explores the digital practices that most effectively support students' development of digital literacy skills. This study specifically aims to identify the impact of understanding digital practices, Using Information, Finding Information, and Creating Information on students' digital literacy. This quantitative study used primary data collection through survey questionnaire. The sample was selected using the convenience sampling and the sample consist of three pioneering universities of Sri Lanka, namely, University of Sri Jayewardenepura, University of Colombo, and NSBM Green University. 120 undergraduate students responded to the questionnaire and data was analyzed by using the SPSS software.

Based on the findings, the experience of using information and finding information has a significant impact on the students' digital literacy. Also, the experience of understanding digital practices and creating information does not have a significant impact on the students' digital literacy.

These findings highlight the need for educational institutions to prioritize specific digital practices, particularly the skills of using and finding information, within their curriculum to enhance digital literacy. By focusing on these areas, universities can better equip students with the critical abilities needed to navigate and assess digital information effectively in both academic and professional contexts.

The study also suggests that while creating digital content is valuable, it may not directly influence digital literacy as strongly as information retrieval and utilization skills. This study contributes to a growing understanding of how targeted digital practices can shape student preparedness for an increasingly digital world.

Keywords: *Digital literacy, Experiential Learning Theory, Learning by Doing Theory, Undergraduate Students*

1. INTRODUCTION

1.1 Background of the Study

In the rapidly advancing digital age, the ability to navigate, understand, and utilize digital technologies has become an essential skill for individuals and societies (Sulaiman & Ismail, 2020). This collection of skills and competencies refer as "Digital Literacy" and the it is not merely about using technology but encompasses a range of capabilities that enable individuals to interact effectively with the digital world, critically access and evaluate information and engage responsibly in the digital space. At its core, digital literacy involves both technical and cognitive aspects. On one hand, it requires a fundamental understanding of various digital tools, devices, and platforms, including computers, smartphones, tablets, software applications, and internet services. This technical proficiency enables individuals to communicate, collaborate, and access information efficiently.

According to Yazonet al., (2019) digital literacy involves critical thinking and the ability to evaluate information from digital sources critically. The internet is a vast repository of information, but it also hosts misleading content, misinformation, and fake news. Digital literacy empowers individuals to distinguish between credible sources and dubious ones, fostering a more informed and discerning approach to consuming information online. Moreover, digital literacy encompasses the skills to protect personal information and privacy in an increasingly interconnected world. Understanding online security measures, recognizing phishing attempts, and safeguarding one's digital identity are crucial components of being digitally literate. Digital literacy is not limited to a specific age group or professional domain; it is a vital skill for everyone. From students researching for assignments and professionals seeking information to senior citizens connecting with family and friends through social media, digital literacy plays an integral role in daily life. Furthermore, digital literacy plays a pivotal role in driving economic growth and societal development. In the modern workplace, proficiency in digital tools and digital communication is often a prerequisite for employment and career advancement. Enhancing digital literacy across all demographics can help bridge the digital divide, ensuring equal access to opportunities and resources in the digital era.

1.2 Background of the context

With the advent of the digital age, technology has significantly impacted university academic activities, leading to the emergence of a more digitally integrated and tech-driven learning environment. This shift has given rise to the concept of digital literacy, as universities recognize the importance of equipping students with the skills needed to navigate the digital world effectively (Schunk, 2022).

Digital literacy is most important to the university's academic activities. Digital literacy enables students to access a vast amount of information and research materials through online databases, digital libraries, and academic journals, Digital

literacy is essential for engaging in online learning, whether through fully online courses or blended learning approaches. Students need to navigate learning management systems, access course materials, and participate in virtual discussions (Shopova, 2020). Universities rely on digital communication tools, such as email, video conferencing, and online collaboration platforms, to connect students, faculty, and researchers and Digital literacy enhances academic writing and presentation skills. Students use word processing software for writing essays, research papers, and dissertations, as well as multimedia presentation tools for sharing their work.

1.3 Statement of the Problem

"Even though universities are paying more attention to improving students' digital literacy, students' digital literacy is low. Does students' digital literacy increase through experience?"

Digital literacy is very important for university academic activities. Ideally, digital literacy is very useful and used in the daily work of universities. According to the European Commission, many universities integrated technology into their teaching methods and curriculum to enhance learning experiences. This included the use of digital tools, online resources, and learning management systems. According to the Educause report the COVID-19 pandemic further accelerated the adoption of digital tools and e-learning platforms in universities. Many institutions transitioned to online education, making digital literacy even more critical for both students and educators. Since universities and lecturers

pay more attention to digital literacy. we think that the digital literacy of university academic students is also at a good level.

However, the reality is that the digital literacy of university students is low. Even though universities and lecturers pay more attention to digital literacy, the number of digital resources used by students for their academic activities is very low. A research paper published in Computers and Education found that while many university students were proficient in using social media and web browsing, their critical thinking skills regarding information evaluation, especially in the context of online sources, were lacking. A study published in the Journal of Information Technology Education found that while most university students were competent in using basic computer applications and tools, they lacked advanced digital skills such as data analysis, and cybersecurity awareness. However digital literacy is very important to students. According to Nuryadi and Widiatmaka, (2023), the 21st-century demands represent the development of digital technology, including Data literacy, and the capacity to comprehend, analyze, and use data and information in the digital world. It is a compulsory competency among students in the 21st century. According to Shopova T, for university students, it is necessary to have knowledge and skills in the field of digital technology to be able to use information effectively in its different forms (e-publications, online video, audio recordings, digital libraries, databases, etc.). Furthermore, students need to be able to work critically with the information resources that they find for their learning activity and have the competencies

to handle independently resolving scientific issues in projects and studies.

The lack of digital literacy among students can have several significant consequences that affect their educational, personal, and professional lives. Students who lack digital literacy skills may struggle to find credible sources and reliable information, hindering their ability to conduct research and make informed decisions, Students who lack these skills may find it difficult to complete assignments, collaborate with peers, and use digital tools effectively. This could lead to lower grades and hinder their overall academic performance and Students without these skills may miss out on valuable opportunities for self-development.

This study aims to check whether students' digital literacy increases through experience. This can create a quality education in Sri Lanka. This research topic has been done in other countries. In Sri Lanka, the researchers also have not tested the connection of experiences in raising student digital literacy. However, they tested the factors affecting digital literacy in the business field and healthcare industry. So, in my research, I hope to determine the connection of experiences in raising students' digital literacy.

1.4 Research Questions

The study has focused on answering following questions to achieving the research purpose:

Does understanding digital practices significantly impact on Digital Literacy of undergraduates?

Does using information significantly impact on Digital Literacy of undergraduates?

Does Finding Information significantly impact on Digital Literacy of undergraduates?

Does Creating Information significantly impact on Digital Literacy of undergraduates?

1.5 Research Objectives

Accordingly the study has achieved the following objectives.

To examine the significant impact of Understanding digital practices on undergraduate students' Digital Literacy.

To examine the significant impact of using information on undergraduate students' Digital Literacy.

To examine the significant impact of Finding Information on undergraduate students' Digital Literacy.

To identify the significant impact of Creating Information on undergraduate students' Digital Literacy.

2. LITERATURE REVIEW

2.1 21st-century Teaching and Learning

Physical Education classes are just as crucial to students' growth as other school subjects, but they must be well-organized and planned, using them for both teaching and learning (Tiamvong, 2023). Institutions of higher learning are fully responsible for assisting students in becoming successful in the age of digital information. Microsoft's Vice-President, of Worldwide Education,

Anthony Salcito said that to prepare the students for the 21st-century workforce, they are required to equip themselves with the necessary skills, particularly in critical and creative thinking, collaboration, communication, and computational thinking. Learning in the 21st century, a teacher needs to change their role to be a creator to facilitate students' learning, so that they can learn by doing and their learning would be created from their minds and brains (Schunk, 2022).

The rapid development of information technology, especially in the field of education, is what distinguishes 21st-century learning changes(Sulaiman & Ismail, 2020). For teachers and students to properly use internet-based digital media, they both need to possess ICT literacy skills, often known as digital literacy. The ability to find, consume, work on, and produce digital content wisely and intelligently is referred to as digital literacy (Basantes-Andrade et al., 2020). For students to be successful in the future, literacy culture is seen as a critical ability in the twenty-first century. The present active student population, Generation Z, is very interested in digitization and has excellent digital abilities. To engage and meet the requirements of these students teachers need to incorporate digitalization into the way they teach(Sánchez-Caballé et al., n.d.). To access, use, and evaluate students' learning outcomes, teachers must also be skilled in using digital technology and communication tools. When using information technology for learning, they play a key role in supporting students to become responsible, critical, creative, and communicative. Schools have a crucial role

in incorporating 21st-century skills into their teaching methods, including communication, teamwork, critical thinking, problem-solving, creativity, and innovation.

The Covid-19 pandemic has greatly affected the development of digital literacy skills in the 21st century. The spread of COVID-19 has prompted the closure of educational facilities all across the world. These universities' rapid development of online learning environments as a result of the closing aimed to ensure that instruction would not be disrupted. The facilities' capacity to respond was put to the test by the COVID-19 epidemic. with an issue involving remote and online assistance. Since the majority are uneducated, it is important to look into the motivations for offering online lessons to students, which go beyond the time of shackles. Before the pandemic, the vast majority of kids had never engaged in distance learning. The virtual world has saved humanity after the COVID-19 pandemic decimated peoples' normal lifestyles around the planet. Schools, like many other organizations, have already shifted their emphasis to interactive networks for online learning. Over the past few years, various forms of e-learning and blended learning have emerged in schools. Although the technology has been around for a while, virtual classrooms have only recently gained popularity.

2.2 Teaching and Learning Difficulties during the COVID-19

With the increase of COVID-19, schools were quickly closed by the implemented legislation. This circumstance was

successful in making educational history. It was necessary to upgrade its method of delivery and concentrate more on new technology (Alvarez, n.d.). The transition from traditional to virtual education has its difficulties, teachers were ill-equipped to handle the new demands. They lacked the tools and the information necessary to participate in the process (Daniel, 2020).

Both students and teachers have been compelled to adapt to a new technological process in education as a result of the abrupt change. The IT infrastructure for online education was found to be lacking or insufficient(Pérez-Jorge et al., 2020). Regarding the digital infrastructure, teachers fall into a lot of difficulties. The teachers' experience with online teaching was limited, and they encountered a knowledge gap and a setting that was unsuitable for it(Baran & Correia, 2014). There should be access to technological infrastructure that supports teachers. The ability to connect to the internet and have the necessary tools would help in integrating technology into teaching(Adarkwah, 2021). Since the field of education lacks a strong IT infrastructure, efforts have been made to create technology that supports online educational ideas. Although there has been opposition to technology in education, because of the crisis, authorities now view technology in education differently(Kerres, 2020). Although there are many ways to distribute learning content in a typical learning environment, distant learning lacks the structure to foster this process. The challenge with online education is not just the technology, but also the educational principles that underpin it(Bartley & Gole, 2014).

Teachers have reported that the preparation for online lessons takes longer than the preparation for traditional lesson planning. It was established that the preparation and layout of instructional materials affected a teacher's efficacy (Pérez-Jorge et al., 2020). Online teaching is claimed to be more laborious than traditional methods of instruction since it requires more time to prepare lessons, deliver them, and then assess students using digital tools (Fish et al., 2009). Teachers made use of their time by updating and uploading learning materials as needed in addition to conducting online learning. Since a variety of communication techniques have been used in online education, more time was spent on communication than in a traditional learning setting (Cavanaugh, 2015). As needed feedback is anticipated when teaching online. This takes a lot of time because each student's work needs to be downloaded, reviewed for areas that need improvement, commented on, and uploaded. It takes longer to write comments for every kid than it does to speak to them. In online education, the teacher's availability is anticipated 24 hours a day (Bair & Bair, 2011).

When teachers are motivated and equipped with the necessary knowledge and abilities, the quality of their instruction improves. As teachers employ innovative delivery strategies, students can improve their learning (Mohamad et al., 2015). Teachers and children had to face these challenges because they did not have digital literacy skills. Before COVID-19, only a very few people had digital literacy skills in Sri Lanka. Those who had digital literacy only had social media and basic searching skills.

Due to covid-19, digital literacy has become a very important aspect for people. Especially in the educational field, teachers and children felt the need for digital literacy skills.

2.3 Digital Literacy

According to Belshaw, n.d., The term literacy can be defined as mastering basic and useful skills that have the power to profoundly improve and modify a person's capacity for thought. Because new technological skills and knowledge are needed in technologically oriented workplaces, the need for learning by individuals, society, and educational authorities has become exceedingly complex in the 21st century with the arrival of new technologies and Web applications. Digital literacy has emerged as one of the key competencies in this age of technological innovation (Cisotto & Pupolin, 2018).

A much larger phrase was required to define this usage to encompass the expanding use of digital technologies. The most appropriate phrase to characterize this technological evolution was "digital literacy" because with the development of Web technologies and increased access to digital technology and the Internet, digital media was becoming the focal point of the "Next Generation." The term "digital literacy" was originally used by Glister in 1997, who described it as the capacity to comprehend and make use of information delivered via computers in a variety of formats and from a variety of sources (*Digital_Literacy*, n.d.). "Digital literacy" is a type of literacy that entails learning and

using certain knowledge, skills, attitudes, and personal traits as well as having the capacity to organize, carry out, and assess practical scenarios (Martin & Grudziecki, 2006). According to (Batcha et al., 2014) Digital literacy is the ability to find, organize, understand, evaluate, and analyze information using digital technology. (Govindarajan, 2020), defined digital literacy as the ability to find, evaluate, utilize, share, and create content utilizing information technology and the Internet in his work titled 'Digital Literacy establishing the Boundaries and Identifying the Partners.' It is the assured and thoughtful application of knowledge and technological resources to advance academic, individual, and professional development. the term digital literacy is defined as an individual's ability to find and evaluate information, use this information effectively, create new content using this information, and share and communicate this newly created information using appropriate digital technologies (Reddy et al., 2020).

2.4 Experiential Learning Theory

In response to John Dewey's appeal for a theory of experience to guide educational innovation, ELT was developed to offer a theoretical underpinning for the practice of experiential learning (Kolb & Kolb, 2017). ELT is a compilation of the writings of those illustrious thinkers whose theories of human learning and development placed a high priority on experience. William James, John Dewey, Kurt Lein, Jean Piaget, Lev Vygotsky, Carl Jung, Mary Parker Follett, Carl Rogers, and Paulo Freire are referred to as the "foundational scholars of experiential learning" in this area of study.

Educators in higher education have utilized ELT learning style data in a variety of ways to improve teaching effectiveness and maximize student learning(Kolb & Kolb, 2017). Students started using inquiry, self-disclosure, conversation, and reflection to learn things about themselves as learners through self-directed learning.

2.5 Learning by Doing Theory

"Learning by Doing," which emphasizes the value of experiencing, hands-on learning in the educational process, is one of John Dewey's most well-known philosophies. According to Dewey's idea, learning is an active process that involves both thinking and doing rather than merely being a passive assimilation of information. He held the opinion that learning occurs most effectively when pupils are involved in worthwhile activities and have the opportunity to use what they have learned in practical settings. This strategy fosters analytical thinking, problem-solving abilities, and a greater comprehension of the material. Learning via doing, on the other hand, motivates pupils to experiment, explore, and learn from first-hand experiences. Learning becomes more interesting and efficient when students engage in hands-on activities that allow them to relate concepts to actual circumstances. Since many educators and organizations now understand the need to incorporate experiential learning into their teaching techniques, Dewey's theories have had a significant influence on current education. To learn effectively, students must link their actions to their experiences and use reflective thinking to make sense of what they experience (Willingham, n.d.).

These theories are linked to an individual's digital literacy and competence

2.6 Understanding Digital Practices

Understanding how to practice and utilize digital technologies effectively is an essential component of digital literacy (Pilav-Velić et al., 2021a). The ability to use digital technologies and interact with digital content is referred to as understanding digital practices. It includes a range of facets of how people use technology and the internet.

According to Tour (2017) understanding digital practices is crucial for enhancing digital literacy. By delving into the nuances of everyday digital literacy practices, researchers and teacher-researchers can fine-tune literacy for learning. This knowledge is essential for reshaping literacy learning. Insights from research on digital literacy practices can have significant implications for learning contexts, classroom practices, and teacher professional development. Understanding digital practices is fundamental for advancing digital literacy and effectively integrating technology into educational settings. According to Pilav-Velić et al. (2021b) there is a positive relationship between digital literacy and digital practice. Research has shown that individuals develop digital skills through practice, which involves trial and error. This means that understanding digital practices can have a significant impact on improving digital literacy. According to Yazon et al. (2019), Students are quite literate when it comes to understanding the types of online users they might anticipate. What happens to the

information people post online can be satisfactorily explained. Their ability to select the appropriate instrument to locate, utilize, or produce information is ordinary. Additionally, they have a limited awareness of how to promote themselves online, locate someone online, and use websites and online tools to obtain and record information online. Additionally, they acknowledged that they are extremely knowledgeable about determining who owns the ideas and material they acquire online and what online information they are legally permitted to reuse.

2.7 Using Information

The ability to successfully analyze, understand, and apply information to resolve issues, make choices, and accomplish specified objectives is referred to as information usage abilities. These abilities entail more than just finding information; they also entail comprehending, appraising, and effectively applying the learned material(Schunk, 2012).

According to Spires et al., (2017), the impact of using information on digital literacy can be significant in various aspects. By enhancing digital literacy skills, individuals can effectively locate, consume, create, and communicate digital content. This proficiency enables individuals to critically evaluate information from diverse sources presented through digital mediums, contributing to informed decision-making and knowledge acquisition. According to Yazon et al. (2019), an evaluation of their information-using digital literacy by a faculty member. academic staff members

are extremely adept at exploiting the information found online. This shows a lack of competency in using various media and determining the reliability and validity of their web source. Due to improper citation techniques, they can be utilizing other people's work while also committing plagiarism. They seldom ever keep track of the crucial information they discover online. They don't have much experience sharing and organizing information utilizing social bookmarking. Additionally, they might have shared files with others in an unauthorized manner.

2.8 Finding Information

Information Seeking, we now have access to a lot of knowledge because of the internet. We nearly have too much information to choose from, which is the issue. It might be challenging to distinguish between accurate information, false information, opinions, and bias. Students need to know how to do reliable searches and then analyze the material they find.

According to Yazon et al., (2019),the ability of academics to obtain material online appears to be fairly good. Although they are quite knowledgeable about the types of material that may be found online, they are incompetent when it comes to using online libraries and complex search features. They are quite accustomed to using search terms and social media sites as information sources when looking for information online. According to (Kanjilal, n.d.) the ability to find information effectively is a crucial component of digital literacy. In the context of digital literacy, finding information skills impacts the overall

competency of individuals in navigating the vast digital landscape, evaluating the credibility of sources, and utilizing information for various purposes. This skill is essential for individuals to keep up-to-date in the knowledge society and to engage in lifelong learning processes. Additionally, the integration of information literacy courses, which include finding information skills, can contribute to the development of digital information literacy skills in learners. According to (Julien, 2017) , the impact of information finding skills on digital literacy is significant. Information finding skills are a crucial component of digital literacy as they encompass the ability to access, evaluate, and use digital information efficiently and ethically. Individuals with strong information finding skills are better equipped to navigate digital environments, make informed decisions, and effectively utilize technology.

2.9 Creating Information

The ability to create fresh knowledge, content, or information is referred to as creating information. These abilities include originality, critical thinking, and the ability to synthesize knowledge in novel ways to produce insights, ideas, or artifacts. (battelleforkids.org).

According to Yazonet al., (2019), students are quite skilled at producing information. It suggests that individuals have trouble leaving comments on blogs, forums, or websites, as well as keeping up with proper netiquette and social norms for online discussions. According to Huvila, 2011, the development of information creation skills has a significant impact on digital literacy.

By improving skills related to creating, organizing, and sharing information, individuals can enhance their ability to navigate and utilize digital resources effectively. information creation and organization as central aspects of being information literate can contribute to enhancing digital literacy skills.

3. METHODOLOGY

In this study research approach is deductive. Because I started the research based on the experimental learning theory and learning by doing theory. After that, I developed my hypothesis and tested it. The research philosophy is Positivism. The research choice is a mono method. Because I only used a quantitative approach to collect data. I used a survey questionnaire to collect data. I used a cross-sectional study to collect data and analyze the data. Because we do have not enough time to do a Longitudinal study.

In this study Population is all the private and government university students in Sri Lanka. The study sample is 120 Undergraduate students from the University of Sri Jayawardhanapura, the University of Colombo and NSBM Green University. I Select my sample by using convenience sampling and snowballing sampling techniques. this study has been done by using primary data. The analysis was done by using the SPSS analysis tool.

3.1 Conceptual Diagram

Variables	Frequency	Percentage (%)
Gender		
Male	52	43.3
Female	68	56.7
Age		
18 -20	9	7.5
21 -23	75	62.5
24 -26	34	28.3
27 -29	2	1.7
Type of the University		
Private University	80	66.7
Government University	40	33.3
Academic Year		
1st Year	15	12.5
2nd Year	18	15
3rd Year	23	19.2
4th Year	64	53.3

Figure 1: Conceptual Diagram

3.2 Hypothesis

H1: Understanding digital practices has a significant impact on Undergraduate Students' Digital Literacy.

H2: Using Information has a significant impact on Undergraduate Students' Digital Literacy.

H3: Finding Information has a significant impact on Undergraduate Students' Digital Literacy.

H4: Creating Information has a significant impact on Undergraduate Students' Digital Literacy.

4. RESULTS AND DISCUSSION

Background of the data

Table 1: The summary of the demographic variables.

In this study, there are 57% of female participation and 43% of male participation. Out of these participations 63% of participations in between the age of 21-23, 28% of participations in between the age of 24-26, 7% of participations in between the age of 18-20, and 2% of participations in between the age of 27-29. For this study, I collected data from private universities and government universities. Of all the participants, 67% of participations in private universities, and 33% of participations in Government Universities. Of all the participations, 53% of participations in the 4th year, 19% of participations in the 3rd year, 15% of participations in the 2nd year, and 13% of participations in the 1st year.

Reliability Testing

Variable	Cronbach's Alpha
Understanding digital practices	0.908
Using Information	0.849
Finding Information	0.895
Creating Information	0.915
Students' Digital Literacy	0.917

Table 2: The summary of Cronbach's Alpha Values.

The Independent variable of understanding digital practices has 0.908 Cronbach's Alpha, the independent variable of using information has 0.849 Cronbach's Alpha, the independent variable of finding information has 0.895 Cronbach's Alpha, the independent variable of creating information has 0.915 Cronbach's Alpha and the dependent variable of student digital literacy has 0.917 Cronbach's Alpha. As per the table, Cronbach's Alpha value is more than 0.7. So, the questions are reliable and

consistent. There I am proceeding with further analysis.

4.3 Background of variables

When considering the understanding digital practices questionnaire Most of the respondents are given "Agree" as the answer. That means the Respondents are competent in understanding digital practices. They are literate in knowing about how to Choose the right tool to find, use, or create information. They have a good idea about how to Use online tools and websites to find and record information online. They are quite literate in what online information they can legally re-use. Moreover, they admitted that they have Knowledge of categories of users they can expect to find online.

In the independent variable of using an information questionnaire, Most of the respondents are given "Agree" as the answer. That means the respondents are competent in Using Information. They are using information in different media. They have good Knowledge to Assess whether an online resource or person is credible and trustworthy. Most of the respondents used other people's work without committing plagiarism. They know how to cite a reference to an online resource using the correct format. Respondents Keep a record of the relevant details of information they find online. They have a background in Using social bookmarking to organize and share information. Moreover, respondents have committed to legal procedures for sharing files with others.

In the independent variable of Finding information questionnaire, most of the respondents are given "Agree" as the answer. That means the respondents are competent in finding information. They know what information they can find on the web and online Library. They are using advanced search options to limit and refine their search. Most of the respondents are familiar with using keywords to search for information online and using social networks as a source of information. They can filter large numbers of search results quickly.

When considering answers to the Creating Information questionnaire respondents are quite competent in creating information. It indicates that they find difficulty in adding comments to blogs, forums, or web pages, observing netiquette and appropriate social conventions for online communications. They do not write online for different audiences and different media for people to read on-screen. They know to communicate with others online and use media-capture devices. The respondents rarely work with others online to create a shared document or presentation.

When considering answers to the dependent variable of Students' Digital Literacy Questionnaire Most of the respondents gave "Agree" as the answer. That means the respondents are competent in Digital Literacy. Most of the respondents are aware of various types of digital devices. The respondents have an understanding of digital literacy. Most of them are willing to learn more about digital technologies, they think that it is important for them to improve their digital fluency and most of the

respondents think that their learning can be enhanced by using digital tools and resources.

Coefficient Analysis

Variable	Significance
Understanding Digital Practices	0.712
Using Information	0.001
Finding Information	0.001
Creating Information	0.802

Table 3: The summary of the Coefficient table.

The independent variable of Understanding digital practices does not have a significant impact on the dependent variable of Students' Digital Literacy (P = 0.712, P > 0.05). Yazon et al. (2019), have found that understanding digital practices has a significant impact on teachers' Digital literacy. So, my findings and the study conducted in 2019 findings are different. It may be that the two were different because the sample and country were different. The study conducted in 2019, they have taken teachers as a sample. But in my study, I get students as my sample. Also, this study was done in the Philippines but my study is based on the Sri Lankan context. Furthermore, the study conducted in the Philippines did the research in 2019, which means before the COVID-19 pandemic. The COVID-19 pandemic affects the improvement of people's digital literacy. So, findings may change due to these reasons. (Tour, 2017), has found that understanding digital practices have a significant impact on students' Digital literacy. So, my findings and the study conducted in the 2017 findings

are different because the country was different. And also this study conducted in 2017, which means before the COVID-19 pandemic. The COVID-19 pandemic affects the improvement of people's digital literacy. Pilav-Velić et al., 2021b , have found that understanding digital practices has a significant impact on teachers' Digital literacy. So, my findings and the study conducted in 2019 findings are different. It may be that the two were different because the sample size and country were different.

The independent variable of Using Information has a significant impact on the dependent variable of Students' Digital Literacy (P = 0.001, P < 0.05). Yazon et al., (2019), have found that the use of information has a significant impact on students' Digital literacy. So, my findings and the study conducted in 2019 findings are the same. It may be that the two findings were the same because both the study's data were gathered from universities and both the countries where Sri Lanka and the Philippines have quite similar cultural backgrounds. Aramide, (2022) has found that the use of information has a significant impact on Digital literacy. So, my findings and the study conducted in 2022 findings are different. It may be that the two were different because the sample size and country were different. The study conducted in 2022, they have taken 193 individuals as a sample. However, in my study, I got 120 individuals as my sample. Also, this study was done in Nigeria but my study is based on the Sri Lankan context. Furthermore, in the study conducted in 2022, they have taken school students as a sample. But in my

study, I get university students as my sample. Spires et al., 2017, have found that the use of information has a significant impact on students' Digital literacy. So, my findings and the study conducted in 2017 findings are the same. It may be that the two findings were the same because the samples are the same.

The independent variable of Finding Information has a significant impact on the dependent variable of Students' Digital Literacy (P = 0.001, P < 0.05). Yazon et al., (2019), have found that the finding information has a significant impact on students' Digital literacy. So, my findings and the study conducted in 2019 findings are the same. It may be that the two findings were the same because both the study's data were gathered from universities and both the countries Sri Lanka and the Philippines have quite similar cultural backgrounds. Aramide, (2022) has found that the finding information has a significant impact on students' Digital literacy. So, my findings and the study conducted in 2022 findings are the same. It may be that the two findings were the same because both the study's data were gathered from students. Aramide's study was conducted in 2022, my study was conducted in 2023. That means both the studies conducted in recent years. So, findings may same due to these reasons. Kanjilal, n.d. , has found that the finding information has a significant impact on students' Digital literacy. So, my findings and the study conducted in 2011 findings are the same. It may be that the two findings were the same because the sample is the same and this research was done in India so, both countries are Asian countries. Julien, 2017, has found that the finding information

has a significant impact on students' Digital literacy. So, my findings and the study conducted in 2017 findings are the same.

the independent variable of Creating Information does not have a significant impact on the dependent variable of Students' Digital Literacy (P = 0.802, P > 0.05). Yazon et al., (2019) have found that the creation of information has a significant impact on students' Digital literacy. So, my findings and the study conducted in 2019 findings are different. It may be that the two were different because the sample and country were different. The study conducted in 2019, they have taken teachers as a sample. But in my study, I get students as my sample. Also, this study was done in the Philippines but my study is based on the Sri Lankan context. Furthermore, the study was conducted in the Philippines done the research in 2019, which means before the COVID-19 pandemic. The COVID-19 pandemic most affected the improvement of people's digital literacy. So, findings may change due to these reasons. Aramide, (2022) has found that Creating information has a significant impact on students' Digital literacy. So, my findings and the study conducted in 2022 findings are the same. It may be that the two findings were the same because both the study's data were gathered from students. Aramide's study was conducted in 2022, and my study was conducted in 2023. That means both the studies conducted in recent years. So, findings may same due to these reasons. Huvila, 2011 , has found that the creation of information has a significant impact on students' Digital literacy. So, my findings and the study conducted in 2011 findings are different. It may be that the two were

different because this research was conducted in 2011 it means before the pandemic. Mt research was conducted after the pandemic. And also, these two research conducted in two different countries and sample also different.

Model Summary

R	0.712
R Square	0.507
Adjusted R Square	0.490

Table 4: The Model Summary Table

The adjusted R Square value of this study is 0.490. that means 49% of changes in the dependent variable will be covered by independent variables. Aramide, (2022) had a 0.33 adjusted R Square value. That means 33% of changes in the dependent variable will be covered by independent variables. In my study adjusted R Square is greater than the adjusted R Square in the Aramide study. because Aramide, (2022) used seven independent variables in their study. but in my study, I use only four independent variables. Usually, this value should be higher than 70%. But in my study, it is 49% only. Also, the study conducted in 2022 adjusted R Square is 33%. These results are correct. Because digital literacy is a very broad area. So, we cannot cover this broad concept by only four independent variables.

5. CONCLUSION

This study aims to identify the Significant impact between independent variables of understanding digital practices, Using Information, Finding Information, and Creating Information on the dependent variable of students' digital literacy. Based on the ANOVA findings of this study, the model that I prepared by using an independent variable as a whole, is a significant model. I measure the strength of the relationship between two variables by using correlation. According to the findings independent variables of understanding digital practices, Using Information, and Finding Information have a strong positive relationship with the student's digital literacy, and Creating information has a weak positive relationship. According to the finding of the coefficient, the independent variables of Understanding digital practices and Creating information do have not a significant impact on the dependent variable of Students' Digital Literacy. Also, independent variables of Using Information and finding information have a significant impact on the dependent variable of Students' Digital Literacy. Based on the findings, the experience of using information and finding information has a significant impact on the students' digital literacy. Also, the experience of understanding digital practices and creating information does not have a significant impact on the students' digital literacy. That means the experience of understanding digital practices and the experience of creating information does not affect the student's digital literacy. However, the independent variables of experience of using information and experience of finding information positively affect the students' digital literacy. According to the findings, most of the respondents are willing to learn more about digital technologies, they think that it is important for them to improve their digital fluency and most of the respondents

think that their learning can be enhanced by using digital tools and resources. So, universities can Offer educational and training programs, teach critical thinking skills to help people evaluate online information critically, organize workshops and community events, and provide access to online resources to enhance students' digital literacy.

5.1 Limitations and Future Research Directions

There are several limitations in this study. due to the time limitation, data were collected from a relatively small sample size, this study covered only three Universities in Sri Lanka, and collecting quantitative data by way of a self-reported online survey in itself may be perceived as being biased. Further research could cover more universities in Sri Lanka and further research could be based upon a larger sample size and using an alternative method to data collection.

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Role of Emotional Intelligence in Mitigating Organizational Politics and Enhancing Employee Commitment in Sri Lanka's Public Sector

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ABSTRACT

This research delves into the intricate relationship between perceived organizational politics and employee commitment within the context of the public sector in Sri Lanka. Furthermore, this study emphasizes the significance of considering individual traits, such as emotional intelligence, in comprehending and managing workplace dynamics effectively. The current study underscores the imperative for organizations to acknowledge and address the detrimental effects of perceived organizational politics on employee commitment. Moreover, it highlights the moderating role of emotional intelligence, showcasing how individuals' confidence in their abilities moderates the impact of perceived organizational politics on employee commitment levels. Through a quantitative analysis of 211 usable responses obtained from a sample of 400,
this study utilized the SPSS to reveals a notable negative correlation between perceived organizational politics and employee commitment. Present study findings demonstrate that the emotional intelligence dimensions related to perceiving, understanding, and managing emotions yielded favorable impacts on the relationship between the perceived organizational politics and employee engagement. It was theorized that individuals with higher level of emotional intelligence are anticipated to exhibit heightened employee commitment and adept management of their work performance amidst organizational politics, in contrast to those with lower emotional intelligence levels. In addition to enriching theoretical understanding, this research offers practical insights for organizational management and human resource practices. scientific

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publications. The abstract should not exceed 300 words, with no indentation.

1. INTRODUCTION

Globalization and heightened competition have significantly amplified the importance for organizations to attract and retain a competent and skillful workforce. As noted by Catteeuw et al. (2007), the interconnected nature of the global market demands that organizations not only source talent from a diverse pool but also implement strategies to ensure their workforce remains engaged and committed. The challenge lies in addressing varied cultural, economic, and professional expectations while fostering an environment that promotes growth, satisfaction, and loyalty among employees. By focusing on these aspects, organizations can maintain a competitive edge and ensure sustained success in an increasingly dynamic global landscape. Organizational Commitment (OC) is defined as employees' emotional attachment and psychological bond with an organization (Meyer & Allen, 1997). This concept emphasizes the strength of the employees' identification with and involvement in their organization, reflecting how employees perceive their relationship with their workplace. High levels of organizational commitment are typically associated with positive outcomes such as increased job satisfaction, reduced turnover, and enhanced organizational performance. Meyer and Allen's framework distinguishes among three components of organizational commitment: affective commitment (emotional attachment to the organization), continuance commitment (awareness of the costs associated with leaving the organization), and normative commitment (feeling of obligation to remain with the organization. A committed employee demonstrates loyalty, psychological attachment to their work, and alignment with the organization's goals (Bulut & Culha, 2010). Research indicates that employees with strong organizational commitment are invaluable assets to an organization. Such a committed workforce can drive enhanced organizational performance, boost productivity, and heighten competitiveness (Chhabra, 2015; Mahal, 2012). The literature suggests that employee commitment, along with their attitudes and feelings towards their employer (Kim et al., 2020), is a strong predictor of performance (Aslam et al., 2020). Furthermore, it is identified as a crucial source of competitive advantage for organizations (Alserhan & Shbail, 2020). Reasons for low employee commitment at work can vary, but organizational politics is often cited as a primary factor. Organizational politics can create a toxic work environment where employees feel undervalued, mistrusted, and unfairly treated. This can lead to decreased morale, increased stress, and a lack of motivation (George, 2023). Other contributing factors may include poor leadership, lack of recognition, limited career advancement opportunities, inadequate compensation, and work-life imbalance.

When employees perceive favoritism, manipulation, and power struggles within the organization, their emotional attachment and loyalty to the company are likely to

diminish, resulting in lower organizational commitment (Dave & Nasit, 2024). Employees who observe political behaviors in the workplace are less likely to be emotionally engaged in their work and tend to show reduced levels of discretionary effort (Treadway et al., 2005). The unavailability of studies in the Sri Lankan context as to how the organizational politics impact on employee commitment. And there is a dearth of studies in the Sri Lankan context that have explored the application of the Conservation of Resources (COR) theory regarding the interaction among these variables and no empirical studies have examined the moderating role of emotional intelligence on the relationship between organizational politics and employee commitment within the Sri Lankan context. This type of study is importantly practical because it will help to determine various points of intervention for the process linking perceived organizational politics to negative employee commitment. Poon (2003) suggested that Emotional Intelligence (EI) could moderate the relationship between Perceptions of Organizational Politics (POP) and work outcomes. He argued that individuals with high emotional intelligence are less likely to perceive a politically charged environment as stressful. These individuals are better equipped to handle the stress associated with such an environment. Moreover, Carmeli (2003) found that the effect of work-family conflict on career commitment is moderated by Emotional Intelligence (EI). Specifically, senior managers with higher levels of emotional intelligence experience a lesser negative impact of family/work conflict on their career commitment. Scholarly interest in the

concept of emotional intelligence began in the early 1920s (Carmeli, 2003). The idea of social intelligence, first proposed by Thorndike (1920), serves as the foundation for the emergence of the concept of emotional intelligence.

The various conceptualizations of emotional intelligence by different scholars can generally be grouped into two main categories: mental ability models and mixed models (Rathi, 2014). After reviewing the existing literature, Mayer et al. (2004) assert that emotional intelligence encompasses four abilities: perceiving emotions, managing emotions, facilitating thought through emotions, and understanding emotions. VanMaanen and Kunda (1989) defined emotion as "self-referential feelings an actor (employee) experiences or, at least, claims to experience regarding the performances he or she brings off in the social world.

1.1 Problem statement

In contemporary organizational settings, the perceived organizational politics remains a pervasive concern, influencing various aspects of employee behavior and attitudes (Hochwarter et al., 2020). Organizational politics, characterized by behaviors such as favoritism, manipulation, and power struggles, has been associated with detrimental outcomes including reduced job satisfaction, increased turnover intention, and diminished employee commitment (Mohammed & Nmadu, 2024). Among these outcomes, employee commitment stands out as a critical indicator of organizational success and effectiveness (Nazir & Islam, 2017). High levels of

commitment are linked to greater job performance, increased organizational citizenship behaviors, and lower absenteeism rates (Grego-Planer, 2019). However, the relationship between perceived organizational politics and employee commitment is complex and multifaceted (Durnalı & Ayyıldız, 2019). While some studies have found a negative association between perceived organizational politics and employee commitment, others have reported no significant relationship or even a positive correlation under certain conditions (Malik et al., 2019). This variability suggests the presence of moderating factors that may influence the strength and direction of this relationship (Dappa et al., 2019). One such moderating factor that has gained increasing attention in the literature is emotional intelligence. Emotional intelligence refers to the ability to perceive, understand, manage, and utilize emotions effectively in social interactions and decision-making (Boyatzis, 2018). Individuals high in emotional intelligence are better equipped to navigate challenging interpersonal dynamics, regulate their emotions in stressful situations, and empathize with others' perspectives (McCloughen & Foster, 2018). As such, emotional intelligence may play a crucial role in shaping individuals' responses to perceived organizational politics and their subsequent commitment to the organization (Khuwaja et al., 2020).

Despite the growing interest in both perceived organizational politics and emotional intelligence, relatively few studies have examined the combined influence of these constructs on employee commitment (Lee et al., 2022). Specifically,

there is a paucity of research exploring the moderating role of emotional intelligence in the relationship between perceived organizational politics and employee commitment (Malik et al., 2019). Understanding how emotional intelligence may buffer or exacerbate the effects of perceived organizational politics on employee commitment is essential for developing targeted interventions and strategies to promote organizational resilience and employee well-being (Wang & Shaheryar, 2020).

Therefore, current study aims to address this gap by investigating the nuanced interplay between perceived organizational politics, emotional intelligence, and employee commitment. By examining how emotional intelligence moderates the relationship between perceived organizational politics and employee commitment, this research seeks to provide valuable insights for organizational leaders and human resource practitioners aiming to enhance employee commitment and mitigate the adverse effects of organizational politics. Through a comprehensive analysis of these dynamics, this study endeavors to contribute to both theoretical advancements and practical implications for organizational management and human resource practices.

Numerous empirical studies conducted in Western culture suggest that emotional intelligence has a positive impact on various individual and organizational outcomes (Shrestha & Baniya, 2016). However, to the best of the researchers' knowledge, no empirical studies have examined the moderating role of emotional intelligence on the relationship between organizational

politics and employee commitment within the Sri Lankan context. Due to the absence of empirical evidence regarding the interaction among these variables (perceived organizational politics, employee commitment and emotional intelligence), and theoretical arguments or empirical tests based on Conservation of Resources (COR) theory are currently lacking.

Therefore, this research aims to examine the moderating role of emotional intelligence in the relationship between perceived organizational politics and employee commitment and the interaction between these variables based on the Conservation of Resources (COR) theory in the Sri Lankan context. Therefore, the framed research questions focusing on the moderating role of emotional intelligence in the context of organizational politics and commitment: How can organizations foster commitment in the face of organizational politics? this question aims to explore strategies and interventions that organizations can implement to mitigate the negative impact of organizational politics on employee commitment, taking into the account the moderating role of emotional intelligence. How does the emotional intelligence of individuals shape their commitment levels in politically charged environments? this question seeks to examine how individuals' beliefs in their abilities (emotional intelligence) influence their commitment to organizational goals when confronted with organizational politics, providing insights into the mechanisms through which emotional intelligence moderates the relationship between perceived organizational politics and employee commitment. By framing these research

questions around the moderating role of emotional intelligence, this study aims to contribute valuable insights for both academic and practical purposes in organizational settings. Understanding how emotional intelligence interact with organizational politics and commitment can inform the development of targeted interventions and support mechanisms to empower employees and foster a positive organizational culture conducive to high levels of commitment, ultimately enhancing organizational performance and effectiveness.

1.1.1 Research Questions

RQ 1: How can organizations foster commitment in the face of organizational politics?

RQ 2: How does the emotional intelligence of individuals shape their commitment levels in politically charged environments?

1.1.2 Research Objectives

The purpose of this research is to,

1. Delves into the intricate relationship between perceived organizational politics and employee commitment.
2. Emphasizing the significance of emotional intelligence moderates the impact of perceived organizational politics on employee commitment levels.
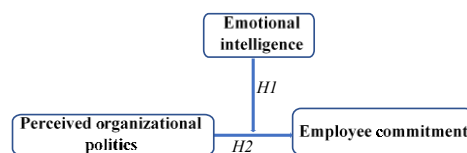

Figure 1. Conceptual Model

This research proposes a conceptual framework (Figure 1) that explores how emotional intelligence moderate the relationship between perceived organizational politics and employee commitment. The framework suggests that emotional intelligence can significantly weaken the negative impact of perceived organizational politics on commitment.

2. THEORETICAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

2.1 Perceived organizational politics and employee commitment

At the outset, scholars perceived political behavior as a reactive coping strategy. However, it encompasses individuals leveraging informal influence to attain desired outcomes not achievable through officially sanctioned procedures within the organization (Gandz & Murray, 1980). Subsequently, the perception of political behavior shifted towards being seen as a method to enhance the circumstances of others rather than solely pursuing individual gains (Kapoutsis et al., 2017). Organizational politics entails a form of employee conduct directed towards maximizing personal interests, whether in the immediate or prolonged term, either at the cost of others or in harmony with their objectives (Kacmar & Ferris, 1991). Such behavior frequently involves manipulation, slander, clandestine undertakings, and the abuse of authority (Ferris & Kacmar, 1992). The consequences of perceived organizational politics have been subject to thorough investigation, with a majority of studies suggesting that these elements can yield adverse effects on numerous critical

affective, cognitive, and behavioral job outcomes. The notion of perceived organizational politics is associated with diminished levels of both task and contextual performance (Chang et al., 2009), reduced work engagement (Kane-Frieder et al., 2014), decreased job satisfaction, and affective organizational commitment, along with heightened job distress (Vigoda, 2002), frustration (Chang et al., 2009), and job tension (Hochwarter et al., 2010). Nonetheless, Ferris et al. (2013) contended that the tangible existence of politics holds less weight compared to individuals' subjective interpretation of politics within the organization, as it holds implications for organizational outcomes. Consistent with this perspective, Ferris and Kacmar (1992) defined perceived organizational politics as individuals' subjective evaluations of the extent to which their work environment is characterized by self-serving behaviors exhibited by colleagues and supervisors.

We draw a link between perceived organizational politics and organizational commitment using the Conservation of Resources (COR) theory. According to COR theory, individuals strive to acquire and protect their resources, such as time, energy, and social support (Hobfoll, 2001). When individuals perceive organizational politics, they perceive a risk to their current resources. Consequently, individuals may experience stress and strive to safeguard their resources, potentially impacting their organizational commitment (Eisenberger et al., 2001). Moreover, perceived organizational politics may have distinct effects on the different facets of organizational commitment, encompassing affective, normative, and continuance

commitment. Affective commitment involves an individual's emotional connection with an organization (Meyer & Allen, 1997), marked by feelings of loyalty, identification, and a strong inclination to maintain affiliation with the organization (Meyer & Allen, 1997). In line with the Conservation of Resources (COR) theory, individuals strive to acquire and protect resources, which encompass emotional attachment to the organization (organizational commitment). Elevated levels of perceived organizational politics may adversely affect affective commitment, leading to a decline in emotional attachment to the organization (Eisenberger et al., 2001). When individuals witness political behaviors within the organization, they may experience feelings of disillusionment, disengagement, and betrayal. These negative emotions can weaken their sense of identification and loyalty towards the organization (Dulebohn et al., 2012). Furthermore, normative commitment involves a sense of duty and moral obligation to remain a part of the organization (Meyer & Allen, 1997). Furthermore, normative commitment involves a sense of obligation and moral responsibility to remain affiliated with the organization (Meyer & Allen, 1991). Individuals with heightened levels of normative commitment possess a strong sense of duty towards the organization and firmly believe in the significance of maintaining their membership due to moral obligation (González & Guillén, 2008). Individuals may feel morally obligated due to the benefits they have received from the organization or a sense of loyalty towards their colleagues or superiors (Meyer &

Parfyonova, 2010). When individuals perceive heightened levels of politics, it can erode the perception of fairness, trust, and reciprocity, which are fundamental to normative commitment. This erosion can diminish the sense of moral obligation to maintain affiliation with the organization.

Thus, researchers propose:

Hypothesis 1: Perceived organizational politics negatively relates to employee commitment.

2.2 Perceived organizational politics and organizational commitment emotional intelligence as a moderator

Emotional intelligence theory has evolved along two primary paths, the ability model and the mixed model. Ability models define EI as a form of standard intelligence (Brackett et al., 2011), involving mental traits or capabilities that can be evaluated through performance-based assessments (Brackett et al., 2006). Mixed models combine three constructs such as personality traits, personal competencies (optimism and self-esteem), and perceived emotional ability. These models are largely based on Goleman (2001) popularization of emotional intelligence. The current study employs Mayer et al. (1997) ability model, which consists of four sequential dimensions or branches. This model defines emotional intelligence as "the capacity to perceive emotions, to access and generate emotions to aid thinking, to understand emotions and emotional knowledge, and to regulate emotions reflectively to foster emotional and intellectual development". Mayer et al. (1997) framework consist of four distinct branches emotional perception, assimilation,

understanding, and management that together form the construct of emotional intelligence. Mayer et al. (2008) present the four-branch model as a spectrum of emotional abilities, progressing from simpler to more advanced levels. These interconnected abilities form a hierarchical continuum, starting with perceiving emotions, a fundamental psychological function, and culminating in the most advanced skill, regulating emotions, which supports self-management (Mayer et al., 2008). The foundational abilities encompass accurate emotion perception and utilizing these emotions to enhance cognitive processes. Advanced skills involve comprehending emotions and employing them for self-regulation or achieving objectives. Individuals with elevated emotional abilities demonstrate enhanced capabilities in navigating emotionally charged contexts, scenarios, and interactions (Farh et al., 2012). Moreover, high emotional intelligence correlates with a heightened awareness of the organizational environment and its goals, as well as the behavioral adjustments necessary to high employee commitment and achieve those goals. Employees with elevated emotional intelligence tend to empathize with the organization as a whole, leading to the adoption of an organizational perspective and subsequent actions aimed at benefiting the organization (Cohen & Abedallah, 2015). Such individuals may demonstrate a predisposition towards engaging in discretionary acts of employee behavior that directly contribute to the organization's objectives. Individuals possessing high emotional intelligence are often finely attuned to the emotions of others, displaying both empathy and sympathy. As a result, they are inclined to engage in voluntary, unenforced acts of kindness that benefit their peers or colleagues.

Individuals possessing the capacity to comprehend their emotions are prone to conveying their feelings more precisely and achieving better comprehension from colleagues in the workplace. When leaders (or any employees) with elevated emotional intelligence voluntarily and selflessly endeavor to articulate their emotions or communicate in a manner beneficial to the organization, their actions may contribute to organizational citizenship behaviors (Carmeli & Josman, 2006). Emotional intelligence has also demonstrated associations with individual performance (Van Rooy & Viswesvaran, 2004), suggesting that employees possessing high emotional intelligence enjoy a competitive edge in the professional environment. Employees adept at managing their emotions demonstrate superior coping mechanisms and cultivate more favorable social relationships: They exhibit a heightened inclination to participate in prosocial endeavors within the workplace (Day & Carroll, 2004), a facet of organizational citizenship behavior. Furthermore, individuals capable of managing their emotions display increased empathy (Ciarrochi et al., 2000) and tend to foster smoother interactions with colleagues due to their proficiency in demonstrating appropriate behavior. These behaviors are consistent with fostering employee commitment even in the presence of organizational politics.

Thus, researchers propose:

Hypothesis 2: Perceived organizational politics and employee commitment emotional intelligence as a moderator.

3. METHODOLOGY

3.1 Data collection procedure and sample

The research sample comprises employees from the public sector in Sri Lanka. Considering the significant impact of the public sector on the country's social, political, and economic progress, along with the wide array of professions within Sri Lanka's public sector workforce encompassing administrative personnel, healthcare providers, educators, and law enforcement officers understanding the commitment levels of public sector employees is of utmost importance.

For data collection, self-administered questionnaires were employed. Out of the 400 questionnaires distributed, 211 were returned and found to be usable, resulting in a response rate of 52.69%. Convenience sampling was utilized as the sampling technique. Prior approval was obtained from the relevant department heads within public sector organizations to facilitate data collection. The questionnaires were distributed with a cover letter outlining the study's objectives. Participants were assured that their responses would remain anonymous and confidential

Among the 211 participants in this study, 56% were male, and about 75% were married. Regarding age, 49% were between 30-39 years old, and 23% were 21-29 years old. In terms of education, 35% had a postgraduate degree, and 31% had completed a professional course. For work experience, 61% had been with their current organization for over 6 years, while the rest had been there for less than 6 years. In terms of job positions, 56% were executives, and 32% were managers.

3.2 Measures

3.2.1 Organizational commitment

This study utilized the 19-item measures created by Meyer and Allen (1997) to evaluate the three dimensions of organizational commitment: affective commitment, normative commitment, and continuance commitment. Participants were asked to express their level of agreement on a seven-point scale, ranging from "strongly disagree" to "strongly agree." The affective commitment scale consisted of six items, including a sample item such as, "This organization has a great deal of personal meaning to me." The coefficient alpha for this scale was 0.74. The normative commitment scale also comprised six items, with a sample item being, "I would feel guilty if I left my organization now." The coefficient alpha for this scale was 0.77. The continuance commitment scale contained seven items, including a sample item like, "If I had not already put so much of myself into this organization, I might consider working elsewhere." The coefficient alpha for this scale was 0.74.

3.2.2 Perceived organizational politics

Organizational politics was assessed using a six-item scale developed by Hochwarter et al. (2003). This scale evaluates the degree to which individuals perceive various political behaviors or actions within their organizations. An example item from the

scale is: "People spend too much time ingratiating themselves with those who can assist them".

3.2.3 Emotional intelligence

The "Self-Rated Emotional Intelligence Scale" (Brackett et al., 2006) was employed to measure the four dimensions of emotional intelligence as outlined by Mayer et al. (2008), comprising 19 items in total perceiving (4 items), using (3 items), understanding (4 items), and managing (self-management 4 items), and social management 4 items). Participants were asked to rate how accurately each of the 19 items described them, using a Likert-type scale ranging from 1 (very inaccurate) to 5 (very accurate). Sample items included, "I know the strategies to make or improve other people's moods," "I am able to handle most upsetting problems," and "When making decisions, I listen to my feelings to see if the decision feels right." Cronbach's alpha for the EI dimensions ranged from 0.74 to 0.85, all falling within acceptable ranges.

4. RESULTS

4.1 Reliability test

Table 1. Reliability Analysis

Variables	Cronbach's alpha value	No. of questions
Perceived organizational politics	0.717	9
Emotional intelligence	0.675	9
Employee commitment	0.755	12

(Source –Reliability analysis by SPSS)

According to Table 1 Cronbach's alpha values of all variables range from 0.717 to 0.755, it fulfills the relevant accepted of reliability. Generally, values should be located between 0.7-1.0. If the alpha values lie between that range, it concludes that the variables are reliable.

4.2 Correlation analysis

Table 2 - two-tailed correlation analysis table

		Perceived organizational politics	Emotional intelligence	Employee commitment
Perceived organizational politics	Pearson correlation	1		
	Sig.(2-tailed)	.000		
	N	211		
Emotional intelligence	Pearson correlation	.721	1	
	Sig.(2-tailed)	.000	.000	
	N	211	211	
Employee commitment	Pearson correlation	-.690	.846	1
	Sig.(2-tailed)	.000	.000	.000
	N	211	211	211

(Source – Correlation analysis by SPSS)

According to the above table 2 the Pearson correlation value of perceived organizational politics and emotional intelligence is 0. 721 and it implies that there is a positive relationship between perceived organizational politics and emotional intelligence. According to the same table, the significant value is 0.000 (i.e. P<0.01) hence both variables are significant at 0.01 the relationship between the variables are significant.

Similarly, Pearson correlation value of Perceived organizational politics and Employee commitment is -0.690 and it implies that there is a Negative relationship between Perceived organizational politics and Employee commitment. According to the same table, the significant value is 0.000 (i.e. P<0.01) hence both variables are

significant at 0.01 the relationship between the variables are significant. Therefore, it can be statistically said that there is a significant and negative relationship between Perceived organizational politics and Employee Commitment.

4.3 Regression analysis

Table 3. Regression analysis (model summary table)

Model	R	R square	Adjusted R square	Std. error of the estimate
1	.750[a]	.780	.786	.1612

a. Predictors: (constant), Perceived organizational politics

Emotional intelligence

b. Dependent variable: Employee commitment

We performed hierarchical multiple regression analysis to test hypotheses. In this work experience a control variable was entered in step 1, predictor variables perceived organizational politics was entered in step 2, and emotional intelligence was entered in step 3. The interaction terms for 'organizational politics and emotional intelligence' were entered in step 4. The scores for organizational politics and emotional intelligence (Aiken & West, 1991). The interaction terms were obtained by multiplying the centered scores (see Table 2). The moderating test was performed in Process 4.0 SPSS. There was significant interaction found between organizational politics and emotional intelligence and employee commitment (r=0.780, p=0.000). It was found that the participants who reported higher emotional intelligence have a positive impact on organizational politics. Therefore, emotional intelligence positively moderates the relationship between organizational politics and employee commitment. This is significant because the significant value

0.000 is less than 0.05(p> 0.05) that we obtain from the significant F change.

5. DISCUSSION

5.1 Theoretical and Practical implications

Understanding emotional intelligence as a moderating factor in the connection between perceived organizational politics and employee commitment enhances current research. This underscores the necessity of exploring how individual differences can influence the impact of organizational factors on employee choices. Incorporating emotional intelligence into the analysis provides a more detailed perspective on the interplay between organizational politics and employee commitment, highlighting the significant role of individual emotional skills in moderating these relationships. Organizations can enhance employee commitment by adopting multifaceted strategies that consider the moderating role of emotional intelligence. First, training programs should focus on boosting employees' emotional intelligence by including components on self-awareness, emotional regulation, and interpersonal skills. This will help employees manage their emotions and relationships better, mitigating the harmful effects of perceived organizational politics on commitment. Second, leadership strategies should involve training managers to effectively recognize and address organizational politics, fostering an open and supportive work environment. This approach is particularly beneficial for employees with high emotional intelligence, who can navigate complex social dynamics and maintain their commitment despite

political challenges. Third, human resource policies should prioritize fairness, equity, and merit, with clear guidelines for decision-making processes to reduce perceptions of politics and strengthen employee commitment. Transparent practices ensure that employees perceive organizational processes as just and impartial, which is especially important for those with lower emotional intelligence. Finally, establishing robust support systems, such as counseling services and mentorship programs, can help employees cope with the stress and negative emotions associated with perceived organizational politics, providing personalized guidance and aiding in navigating politically charged work environments more effectively. Aligning personal development initiatives with organizational practices fosters a positive workplace environment that enhances employee well-being and commitment. Enhancing emotional intelligence, fostering supportive leadership, ensuring transparent human resource policies, and providing robust support systems collectively reduce the negative impact of organizational politics. These integrated approaches empower employees and contribute to the overall success of the organization.

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