



CONFERENCE PROCEEDINGS

6TH INTERNATIONAL CONFERENCE ON MARKETING MANAGEMENT

Resilience and Innovation: Building Adaptive Strategies for Emerging Markets

ICMM 2026

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MESSAGE FROM THE PRESIDENT OF THE SRI LANKA INSTITUTE OF MARKETING (SLIM)



Prof. Dewasiri N. Jayantha

It is with immense pride and a deep sense of fulfilment that I present this message for the Conference Proceedings of the 6th International Conference on Marketing Management (ICMM 2026), organised by the Sri Lanka Institute of Marketing. As the Founder of ICMM and now President of SLIM, this occasion is particularly meaningful to me, as it reflects the sustained growth and evolving impact of a vision that began in 2020.

ICMM 2026, themed “Resilience and Innovation: Building Adaptive Strategies for Emerging Markets,” is both timely and relevant. In an era marked by economic volatility, technological disruption, and shifting consumer expectations, marketing has assumed a strategic role that goes far beyond traditional boundaries. This conference has provided a vital platform for scholars, practitioners, and policymakers to critically examine how resilience and innovation can be harnessed to shape adaptive marketing strategies, particularly in emerging and developing markets.

Over the years, ICMM has matured into a genuinely international scholarly forum, fostering rigorous academic discourse while maintaining strong relevance to practice. The papers published in these proceedings reflect the intellectual depth, methodological rigour, and contextual relevance that ICMM consistently upholds. I am confident that these contributions will enrich marketing scholarship and offer valuable insights for both academia and industry.

I am deeply honoured to acknowledge our distinguished Keynote Speakers, whose expertise and global perspectives have significantly

elevated ICMM 2026. Professor Bruno S. Sergi, a globally recognised scholar in worldwide economics and emerging markets, has brought profound academic insight shaped by his extensive work with leading international universities, journals, and institutions. Dr. Asanga Ranasinghe, with over two decades of senior leadership experience at Unilever and other leading conglomerates, has enriched the conference with invaluable practitioner insights spanning marketing, innovation, sustainability, and corporate leadership. Their contributions have bridged theory and practice in a truly meaningful manner.

I wish to place on record my sincere appreciation to the Conference Chair, Ms Shanika Rathnasiri, for her tireless efforts in making the 6th ICMM a reality. Furthermore, I extend my deepest gratitude to the Conference team, including Secretary Ms Iresha Hettige and the Coordinating Secretary Ms Shashini Bulumulla, whose professionalism, commitment, and attention to detail ensured the successful planning and execution of ICMM 2026. My special thanks are also extended to Dr. Dilhan Sampath Jayathilake, Vice President – Education and Research, for his strategic leadership and unwavering support; to Mr. Chamil Wickramasinghe, CEO, and to Mr. Sadeepa Abeynayake, Senior Manager – SLIM Business School, for their vital roles in operational coordination and delivery.

I also acknowledge with gratitude the members of the organising committee, reviewers, session chairs, authors, and participants—both local and international—whose collective efforts have upheld the academic integrity and reputation of this conference. Your contributions have been instrumental in reinforcing ICMM's standing as a credible and impactful international conference in marketing management. Further, I extend my sincere appreciation to Emerald Publishing, our Academic Partner, for its continued support in strengthening ICMM's academic quality, visibility, and global reach.

As we look ahead, ICMM will continue to catalyse knowledge creation, collaboration, and innovation, particularly in advancing marketing thought leadership from the Global South. I trust that the research published in these proceedings will inspire future inquiry, inform policy and practice, and meaningfully shape resilient and innovative marketing ecosystems.

I extend my warmest congratulations to all contributors and my sincere appreciation to everyone who made ICMM 2026 a success. I look forward to the continued evolution of ICMM and to engaging with you again in our shared pursuit of excellence in marketing scholarship and practice.

Warm regards,

Prof. Dewasiri N. Jayantha
PhD (Col), MSc (SJP), PgDMM (SJP), BA (UK), MSLIM, CMgr FCMI (UK), FIML (Aus), FCIM (UK), CMA, MIM (SL).

President – 2025/2026, Sri Lanka Institute of Marketing
Founder – International Conference on Marketing Management (ICMM)
Brand Ambassador, Emerald Publishing, South Asia
Professor in Finance, Faculty of Management Studies,
Sabaragamuwa University of Sri Lanka
Director – PMF Finance PLC

MESSAGE FROM SENIOR VICE PRESIDENT- EDUCATION AND RESEARCH



Dr. Dilhan Sampath Jayatilleke

'International Conference on Marketing Management' ('ICMM') is one of the key events in the Event Calendar of the Sri Lanka Institute of Marketing. Though this event does not carry the glitz and glamour of the usual National Events of SLIM, the importance is no different to any. As an organisation that is focused on Education as its core business, Research is given equal prominence. ICMM, being an event that is addressing the Academic Research component, since the beginning of the initiative; it has grown in leaps and bounds.

When we talk about ICMM, we cannot forget the Brainchild of this lovely initiative, who is none other than Prof. Dewasiri N. Jayantha, serving as the President of SLIM this year, he started this wonderful initiative when he first joined the Council of Management of Sri Lanka Institute of Marketing as Treasurer. This ICMM opened up many remarkable and worthwhile avenues for SLIM in its life span so far. We have to be grateful to Prof. Dewasiri N. Jayantha for that.

I will fail in my duty if I do not take the opportunity to thank the individuals who have submitted Research Papers for ICMM. Representing the State and Private Sectors Institutions, many have come forward to try their luck at ICMM. The number of papers also increased this year, which means that many have kept their hopes on SLIM and ICMM. Over the Years, the credibility of ICMM has grown in stature; hence, increasingly, the Research Papers have come. Sri Lanka Institute of Marketing is the National Body for Marketing and in its rich history of over 55 Years had been always on Trust, Quality, Value and Credibility. ICMM is yet another testament to that.

The International Conference on Marketing Management stand very special in my Heart since I was the Project Chairman of the same last Year. Therefore, I also have pride in it to say that I also contributed to its Growth. This Year, serving as the Senior Vice President of Education & Research at SLIM, I see that some aspects have enhanced in Quality and Value. Everything that we do must grow step by step. This is also the same, and I have seen the Growth and Development of ICMM Year after Year.

In Conclusion, let me wind up by extending my Heartfelt Gratitude to each and everyone who joined hands to make ICMM a resounding success. I have seen how they have been contributing by investing their valuable time. ICMM is a great event and a fruitful one. All of that is as a result of the immense contribution by many capable and committed individuals at SLIM and outside of SLIM. HATS OFF to everyone for that! All the Best for a remarkable ICMM...!!!

Dr. Dilhan Sampath Jayatilleke

Senior Vice President -Education and Research
Sri Lanka Institute of Marketing (2025/2026)

MESSAGE FROM THE VICE PRESIDENT - EVENTS AND SUSTAINABILITY



Mr. Enoch Perera

It is with great pride and enthusiasm that I extend my greetings to all delegates, academics, industry professionals, and partners gathered for the 6th International Conference on Marketing Management (ICMM 2026). This year's theme, "Resilience and Innovation: Building Adaptive Strategies for Emerging Markets," is both timely and deeply relevant to the realities we face today.

Across the globe, businesses and institutions are navigating unprecedented change economic shifts, technological disruption, sustainability challenges, and evolving consumer expectations. In such an environment, resilience is no longer optional; it is a strategic imperative. Equally, innovation must move beyond novelty to become purposeful, inclusive, and impact-driven. ICMM 2026 serves as a vital platform to explore how these two forces can work together to shape adaptive and sustainable marketing strategies, particularly within emerging markets.

As Vice President – Events, I am proud that ICMM continues to bridge academic excellence with real-world application, encouraging dialogue that goes beyond theory and delivers actionable insights. The conference brings together diverse perspectives, fostering collaboration between researchers, practitioners, and policymakers to collectively rethink the future of marketing.

I extend my sincere appreciation to the organising committee, reviewers, speakers, authors, and participants whose dedication has made this conference possible. Your contributions ensure that ICMM remains a space for meaningful exchange, learning, and progress.

I wish all delegates a rewarding and intellectually enriching conference, and I am confident that ICMM 2026 will inspire ideas that drive resilience, innovation, and lasting impact.

Mr. Enoch Perera

Vice President - Events and Sustainability
Sri Lanka Institute of Marketing (2025/2026)

MESSAGE FROM THE CEO OF SLIM



Mr. Chamil Wickramasinghe

It is my great pleasure to welcome you to the 6th International Conference on Marketing Management (ICMM 2026), organized by the Sri Lanka Institute of Marketing (SLIM) and the SLIM Research Bureau, in collaboration with Emerald Publishing. I am honored to address this distinguished gathering of academics, researchers, and industry professionals from Sri Lanka and around the world. Since its inception in 2020 as the vision of Prof. (Dr.) Dewasiri N. Jayantha, ICMM has evolved into a respected international research platform that bridges academic rigor with industry relevance. Over the years, the conference has continued to strengthen its contribution to marketing scholarship, knowledge dissemination, and professional practice. The theme of ICMM 2026, “Resilience and Innovation: Building Adaptive Strategies for Emerging Markets,” is both timely and significant. As emerging markets navigate rapid technological, economic, and societal shifts, the ability to build adaptive, resilient, and innovation-driven strategies has become central to sustainable growth. This conference provides an essential forum to examine these challenges through scholarly research and real-world insights. We are privileged to host an exceptional panel of keynote speakers, including Professor Bruno S. Sergi of Harvard University, a globally recognized scholar in economics and emerging markets, and Dr. Asanga Ranasinghe, a seasoned corporate leader with over two decades of senior leadership experience at Unilever and other leading organizations. Their academic depth and industry expertise reflect the strong interdisciplinary foundation that ICMM continues to uphold. I extend my sincere appreciation to all researchers, reviewers, speakers, and members of the organizing committee whose dedication has made ICMM 2026 possible. I also thank our participants for choosing ICMM as the platform to share your research and engage in meaningful dialogue that advances marketing

knowledge and practice. On behalf of the Sri Lanka Institute of Marketing, I warmly welcome you to ICMM 2026 and wish you a highly enriching and intellectually stimulating conference experience.

Mr. Chamil Wickramasinghe

Chief Executive Officer

Sri Lanka Institute of Marketing (SLIM)

MESSAGE FROM THE CONFERENCE CHAIR



Mrs. Shanika Rathnasiri

An international conference is more than an academic gathering; it is a powerful platform that builds recognition, strengthens institutional identity, and creates meaningful impact across academia, industry, and society. The International Conference on Marketing Management (ICMM), conceptualized and organized by the Sri Lanka Institute of Marketing (SLIM), continues to stand as a distinctive global forum that connects scholars, practitioners, and thought leaders while generating valuable insights for the evolving marketing landscape.

The 6th International Conference on Marketing Management (ICMM 2026) is proudly presented under the theme *“Resilience and Innovation: Building Adaptive Strategies for Emerging Markets.”* This theme reflects the realities of a rapidly transforming global environment where marketers and organizations must continuously adapt to uncertainty, technological disruption, and shifting socio-economic dynamics. As emerging markets face complex challenges and opportunities, the need for innovative, resilient, and ethically grounded marketing strategies has never been more important.

Contemporary marketing is no longer confined to traditional theories or practices; instead, it demands interdisciplinary thinking, digital transformation, and a strong commitment to sustainable growth and societal wellbeing. Through the research presented at ICMM 2026, we aim to inspire new perspectives that empower organizations to navigate change while fostering inclusive and responsible market development. The conference proceedings capture a diverse

collection of scholarly contributions that explore cutting-edge topics, offering both theoretical advancements and practical implications for academics and practitioners worldwide.

I would like to extend my sincere appreciation to all those who contributed to the success of ICMM 2026: advisory committee, including the President, Prof. (Dr.) Dewasiri N. Jayantha, Vice President - Education and Research, Dr. Dilhan Sampath Jayatilleke, Vice President – Events and Sustainability, Mr. Enoch Perera, the Chief Executive Officer, Mr. Chamil Wickremasinghe, keynote speakers, session chairs and panelists, reviewers, organizing and technical committees, and the dedicated staff of the SLIM. Your collective commitment and professionalism have been instrumental in shaping this conference into a meaningful academic milestone.

I warmly thank all authors and participants for their valuable contributions and engagement. I hope that these proceedings will serve as a lasting resource that inspires future research, encourages collaboration, and supports the development of resilient and innovative marketing practices across emerging markets.

Warm regards,

Mrs. Shanika Hansini Rathnasiri

Conference Chair, 6th ICMM 2026

Senior Lecturer, Sabaragamuwa University of Sri Lanka

MESSAGE FROM CONFERENCE SECRETARY



Ms. Iresha Hettige

“Resilience and Innovation: Building Adaptive Strategies for Emerging Markets” captures the spirit of collaboration, adaptability, and forward thinking that defines the 6th International Conference on Marketing Management (ICMM 2026). This conference brings together scholars, practitioners, and thought leaders from across the globe to share knowledge, exchange perspectives, and engage in meaningful dialogue on the evolving challenges and opportunities within marketing, particularly in emerging market contexts.

In an era marked by uncertainty, rapid technological advancement, and shifting socio-economic conditions, resilience and innovation have become central to effective marketing practice. This theme highlights the need for adaptive, ethical, and sustainable strategies that enable organizations to respond proactively to change while creating long-term value for businesses and society alike.

ICMM has consistently served as a distinctive platform for researchers to present cutting-edge scholarship, foster intellectual exchange, and advance the boundaries of marketing knowledge. I am pleased to witness the diversity, relevance, and academic rigor of the research presented at ICMM 2026. The papers included in these proceedings have undergone a thorough review process, reflecting the high standards maintained by our dedicated panel of reviewers. My appreciation is further extended to the advisory committee, Conference Chair, Coordinating Secretary, keynote speakers, reviewers, session chairs, organizing and technical committees, and the staff of SLIM for their collective support and professionalism.

Finally, I extend my heartfelt thanks to all authors and participants for their enthusiasm, intellectual contributions, and active engagement. I trust that the outcomes of ICMM 2026 will continue to inspire future research collaborations and contribute meaningfully to the development of resilient and innovative marketing strategies across emerging markets.

Ms. Iresha Hettige

Conference Secretary, 6th ICMM 2026

Lecturer, The Open University of Sri Lanka

MESSAGE FROM THE KEYNOTE SPEAKER



Prof. Bruno S. Sergi

Resilience and innovation, the core themes of the 6th International Conference on Marketing Management (ICMM 2026), reflect the evolving role of marketing in driving socioeconomic transformation across emerging markets. Positioned at the intersection of these themes, the conference advances a forward-looking discourse that seeks to translate scholarly insights into practical, sustainable development outcomes in the Global South.

Organized by the Sri Lanka Institute of Marketing (SLIM) in collaboration with the SLIM Research Bureau, ICMM 2026 emphasizes rigorous empirical research that links individual consumer behaviour with broader market and societal dynamics. Through research papers, working sessions, and scholarly dialogue, the conference promotes methodological robustness, interdisciplinary engagement, and scalable marketing solutions relevant to contemporary global challenges.

The conference highlights ethical marketing as a strategic pathway toward sustainable adoption and responsible governance of market practices. Within rapidly developing economies, this includes strengthening transparency, accountability, and credible signalling mechanisms through evidence-based evaluation, consumer education, and responsible innovation.

Bringing together distinguished scholars and emerging researchers, ICMM 2026 integrates contextual knowledge, robust research methodologies, and ethical marketing perspectives to foster inclusive and sustainable development. The proceedings presented here reflect the conference's commitment to advancing impactful scholarship capable of informing practice, shaping policy conversations, and contributing to the evolving landscape of marketing management.

Warm regards,

Prof. Bruno S. Sergi
Harvard University, USA

MESSAGE FROM THE KEYNOTE SPEAKER



Dr. Asanga Ranasinghe

It is with great pleasure that I extend my warmest greetings for the 6th International Conference on Marketing Management (ICMM 2026), convened under the timely and thought-provoking theme, *“Resilience and Innovation: Building Adaptive Strategies for Emerging Markets.”*

In an era of economic volatility, technological disruption, climate vulnerability, and shifting consumer expectations, emerging markets must adopt strategies that are both competitive and resilient. Resilience goes beyond recovery, encompassing the ability to absorb shocks, adapt, and innovate continuously for sustainable growth. Similarly, innovation extends beyond technology to the deliberate development of novel approaches to value creation, stakeholder engagement, and long-term societal impact. Together, adaptive resilience and strategic innovation form the pillars for navigating complex and uncertain market environments.

The research published in these proceedings highlights the critical importance of collaboration between academia and industry in shaping adaptive, human-centered, and sustainable marketing strategies. Through rigorous inquiry and evidence-based insights, these contributions illustrate how emerging markets can transform constraints into catalysts for progress. I commend the organizers and contributors for advancing knowledge that will help shape a more resilient and innovative future.

Warm Regards,

Dr. Asanga Ranasinghe

Director

Postgraduate Institute of Management

University of Sri Jayewardenepura

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**THE IMPACT OF MOBILE AUGMENTED REALITY MARKETING ON
CUSTOMER PERCEPTION IN THE COSMETIC INDUSTRY, SRI
LANKA: THE MEDIATING EFFECT OF CUSTOMER AWARENESS**

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ABSTRACT

The rapid evolution of Mobile Augmented Reality (MAR) has become a transformative element in digital marketing, particularly within visually driven industries such as cosmetics, where consumer decisions are heavily influenced by product presentation, interactivity, and immersive experiences. Mobile Augmented Reality integrates digital overlays with the real-world environment via mobile devices, offering interactive brand engagement that surpasses traditional marketing. This study investigates the conceptual and empirical connection between Mobile Augmented Reality Marketing and Customer Perception in the Sri Lankan cosmetic industry, highlighting the mediating role of Customer Awareness. Although previous research has focused on Augmented Reality in advertisement contexts, there is a lack of empirical evidence as to how Mobile Augmented Reality Marketing influences Customer Perception through the mediating role of Customer Awareness within the cosmetic industry of Sri Lanka. In this three-way model, Mobile Augmented Reality first creates awareness through informing and engaging the users. Then it enhances perception through increased trust and purchase confidence. Thus, a gap exists in understanding about recognizing the value of Augmented Reality Marketing and its influence in emerging economies like Sri Lanka, where technology adoption is still growing,

compared to the developed markets. To address this, a quantitative survey was conducted among 359 Sri Lankan consumers with experience or awareness of Mobile Augmented Reality based cosmetic marketing, using convenience sampling. The data were analyzed using Structural Equation Modelling (SEM) through Smart PLS software. The results show that Mobile Augmented Reality Marketing has a significant and positive impact on Customer Perception, with its power in raising user satisfaction and brand interaction. Moreover, Mobile Augmented Reality exerts a strong positive influence upon Customer Awareness, which in turn affects Customer Perception, confirming its mediating role. The mediation analysis shows that awareness partially mediates the relationship between Mobile Augmented Reality and Customer Perception, revealing that not only does awareness arise from exposure to Mobile Augmented Reality but also strengthens its perceptual effect. Overall, this study confirms that Mobile Augmented Reality can definitely enhance Customer Perception when combined with strategic efforts of awareness building. Therefore, this provides valuable implications for marketers to engage digital consumers and enhance purchase behavior in Sri Lanka's cosmetic industry.

Keywords: Customer Awareness; Customer Perception; MAR Applications; Mobile Augmented Reality; QR code; Sri Lankan Cosmetic Industry.

1. INTRODUCTION

1.1 Background

Mobile Augmented Reality has emerged rapidly in recent times as an innovative tool in digital marketing, which creates an interactive and immersive experience of products, particularly in visually driven sectors such as the cosmetic industry (Javornik, 2016; Rauschnabel et al., 2022). Technology enables customers to see cosmetic products more confidently, makes informed choices, and facilitates virtual try-ons, 3D demonstrations of products, and overlays information in real time (Hilken et al., 2017; Yim et al., 2017). While global brands

successfully integrate this into their marketing activities, the adoption in Sri Lanka is still at a nascent stage, except for a few noteworthy implementations such as the AR campaigns of Spa Ceylon (Pantano et al., 2017). With increasing digital engagement in Sri Lanka, there was an increasing need to understand how MAR influences customer perception and buying decisions. However, consumer response to MAR depends not only on exposure to technology but also significantly on their awareness and understanding of how it works, thereby making customer awareness a key factor in shaping perception and confidence.

1.2 Research problem

Despite the global adoption of MAR marketing, its role in influencing customer perception within the Sri Lankan Cosmetic Industry is unexplored and under-researched (Modak & Singha, 2019). Existing literature has provided evidence on customer awareness and perception for Mobile based Augmented Reality Advertising, but when it comes to the marketing term, advertising is a small instant under the subject of marketing, and it has undiscovered (Modak & Singha, 2019). Therefore there exists a significant knowledge and empirical gap in understanding how MAR marketing affects consumer perception and how customer awareness bridges this gap (Modak & Singha, 2019). The lack of regional studies, coupled with low local adoption of MAR marketing, creates a research void in identifying effective digital marketing strategies for cosmetic brands in Sri Lanka (Rauschnabel et al., 2019). Current evidence shows consumers' attitudes towards Mobile Advertising in developing countries, rather than finding new technologies like Mobile Augmented Reality Marketing and hidden in developing countries like Sri Lanka (Rauschnabel et al., 2019).

1.3 Objective(s) of the study

The objectives of the study are below,

- To identify the Impact of Mobile Augmented Reality on Customer Perception.
- To identify the mediating role of Customer Awareness on the relationship between MAR and Customer Perception.

Identifying these are important in the beauty and cosmetics market, which has highly experiential and appearance and perception-

oriented products, wherein the customers depend greatly on visuals and understanding related to products and perceptions prior to actual buying. MAR technology helps customers virtually try products, see the texture and color of products, and understand the benefits of products. However, the capability of MAR in impacting on the perception of customers depends heavily on the degree of awareness it generates in customers about the products. As customers become more aware through MAR technology, it results in an increase in their confidence level and enables them to perceive products accurately and positively. Therefore, it becomes an important area to analyze the mediating factor of customer awareness in this area.

1.4 Significance of the study

This study is vital since it highlights how Mobile Augmented Reality can enhance digital marketing within Sri Lanka's cosmetic industry through improved customer engagement, product visualization, and confidence in purchasing. This study fills a significant academic gap as only limited studies have explored the impact of Mobile Augmented Reality on customer perception and the mediating role of customer awareness in emerging markets on that relationship. The findings contribute to practical value for brands and marketers, which shows how Mobile Augmented Reality can strengthen customer perception, brand connection, and competitive advantage. Besides, this study supports policymakers, Augmented Reality developers, and investors with evidence of the relevance of immersive technologies in shaping consumer behavior and driving digital transformation in Sri Lanka.

2. LITERATURE REVIEW

The evolution of Augmented Reality (AR) began in the latter part of the 20th century when Ivan Sutherland introduced the concept of a head-mounted display in the 1960s (Sutherland, 1968). The early versions of AR technology were intended for expert usage in domains like aviation, medicine, and military training (Sutherland, 1968). The early AR technology required significant advancements in the development of computer technology (Azuma, 1997). The development of cell phones led to the development of Mobile Augmented Reality (MAR) technology (Rauschnabel et al., 2017). The

development of MAR technology gave rise to new applications in various fields like marketing (Javornik, 2016).

AR is distinguished from Virtual Reality in that the former supplements the real world while the latter supplants the real world, giving an improved yet authentic experience, especially in experiential marketing (Azuma et al., 2001). Recent studies show the importance of AR in increasing the perceived usefulness, fun, and engagement, and that these have favorable effects on the attitude and intention to purchase (Kim & Choo, 2021; Yim et al., 2017). In the area of e-commerce, the usage of AR in terms of 3D objects and virtual try-on leads to increased satisfaction and engagement (Voicu, Sîrghi, & Toth, 2023). Furthermore, its immersive nature improves recall and promotes brand engagement, very important in terms of shaping the perception of the customer (Voicu et al., 2023).

Despite these advances, most studies have focused on developed markets, thus leaving a gap in knowledge with respect to AR's strategic role beyond promotion, especially about how MAR would influence customer perception through customer awareness as a mediating effect, a less explored area in the literature (Venkatesh et al., 2012). While awareness itself is widely recognized in technology acceptance models like TAM2 and UTAUT, it is often treated as an independent variable measuring either familiarity or usefulness without adequately describing how awareness shapes consumers' interpretation, confidence, and ultimately their experiential quality (Venkatesh et al., 2012).

In emerging markets like Sri Lanka, the adoption of AR is in its initial stages but is slowly growing. AR campaigns by domestic brands like Spa Ceylon, "Butterfly Paradise," which combines ecological storytelling with AR engagement, have increased brand engagement and awareness (Spa Ceylon's Immersive Butterfly Paradise, 2024). Partnerships with innovation companies like Lucido Inc. have increased the number of immersive marketing campaigns for key brands in the Sri Lankan market, including global brands like Samsung (Lucido Inc. Immersive Technology, 2025). In a non-business setup, campaigns like the geo-located AR Vesak project by Softlogic Life prove that AR technologies can connect with people on an emotional and cultural plane (Softlogic Life AR Vesak, 2024).

Although global studies confirm that MAR enhances brand experience, product evaluation, and purchase intention, evidence remains limited in emerging markets like Sri Lanka (Pantano & Gandini, 2017). The adoption of MAR is still expanding locally only a few examples, like Spa Ceylon's AR-based promotions, have showcased this. This emphasizes the need to examine how Sri Lankan consumers perceive MAR and if the technology effectively enhances their understanding and trust in cosmetic products.

Another critical gap in literature pertains to customer awareness. While awareness is widely recognized in technology acceptance theories such as TAM2 and UTAUT, few studies investigate it as a mediating variable that explains how MAR influences customer perception (Venkatesh et al., 2012). Past studies tend to adopt awareness as an independent variable alone, targeting either familiarity, usefulness, or mere knowledge without addressing how awareness forms consumer interpretation and confidence and finally experience quality (Poushneh & Vasquez-Parraga, 2017). In the Sri Lankan cosmetic sector, MAR is an emerging technology, and consumers may not be aware or have a proper understanding of the functional role of MAR, which might shape their perception regarding the technology as well as the brand (Rauschnabel et al., 2019).

Therefore, this study fills these gaps by examining the impact of Mobile Augmented Reality Marketing on customer perception while evaluating customer awareness as the mediating mechanism that links MAR experiences to cognitive evaluations in the Sri Lankan cosmetic industry (Modak & Singha, 2019).

Yet, a prominent research gap in the empirical literature concerns the impact of MAR campaign performance in terms of the customer awareness and perception in the Sri Lankan fast-moving consumer products market, including the cosmetic industry. Although anecdotal research confirms the constructive impact of AR in terms of customer behavior change, the mediating impact of customer awareness in this phenomenon has yet to be analyzed.

This is important because awareness acts as a determinant for the way in which consumers make interpretative sense of MAR experience in terms of their confidence in the technology itself and the

brand related to it (Du et al., 2022; Modak & Singha, 2019). Thus, the impact of MAR for customer perception and the assessment of awareness as a mediator is important in examining consumer behavior in the digital market of Sri Lanka.

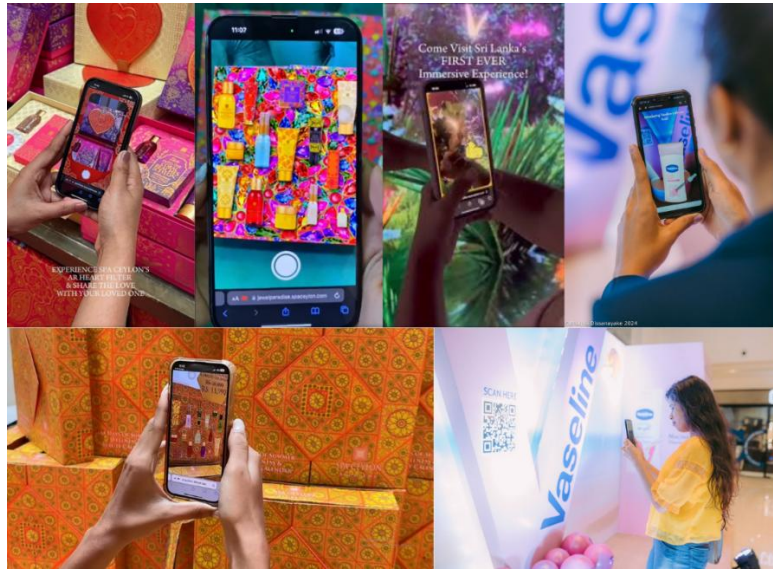


Figure 1: Spa Ceylon and Vaseline's MAR campaigns

2.1 Conceptual framework

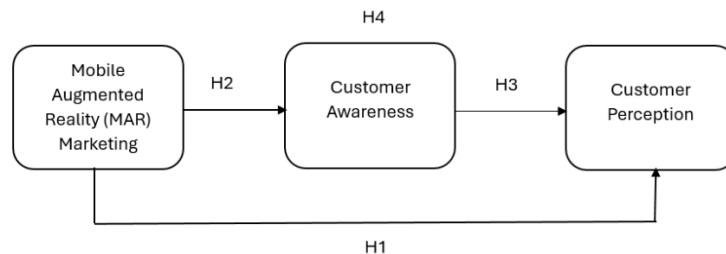


Figure 2: Conceptual Framework

Figure 2 shows the conceptual framework of the study which was developed according to the empirical and theoretical findings and four hypotheses were developed based on that.

H1: *There is a significant impact of MAR marketing on Customer Perception in cosmetic industry, Sri Lanka.*

H2: *There is a significant relationship between MAR Marketing and Customer Awareness in cosmetic industry, Sri Lanka.*

H3: *There is a significant relationship between Customer Awareness and Customer Perception in cosmetic industry, Sri Lanka.*

H4: *There is a mediation effect of Customer Awareness on MAR Marketing and Customer Perception.*

3. METHODOLOGY

3.1 Research philosophy

Research philosophy underpins a structured approach to the collection and analysis of data, and it forms the outer layer of the research onion. Research philosophy is necessary to understand, four major types are generally identified interpretivism, positivism, pragmatism, and realism, positivism is an important one. Positivism deals with facts that are observable and measurable, which exist independently of human perceptions. It focuses, then, on using scientific methods to determine cause-and-effect through empirical data. This paradigm is generally linked to quantitative methods, studying the world as an independent entity from the observer.

3.2 Research strategy

A research strategy has four elements which are topic, focus, design, and methods. It simply demonstrates how conclusions can be developed from research questions and research methodologies. The major strategies for researching are case study, quantitative survey, experiment, action research, grounded theory, and ethnography. This research adopts a quantitative survey strategy, as this is the business research method preferred by practitioners to reach wider audiences. An effective questionnaire should be developed carefully, avoiding broad topics and not being confusingly worded. The study explores how mobile augmented reality marketing influences the customers' perceptions, with customer awareness being taken as the mediating variable.

3.3 Research context

This study is set in the context of the Sri Lankan cosmetic industry, which is growing rapidly but still in the infancy stages of digital

adoption. Although MAR is widely used by global cosmetic brands, local adoption is still confined to a few campaigns, as seen in the case of Spa Ceylon. This provides a unique environment within which the impact of MAR on consumer perception can be studied in a market with mixed levels of technological familiarity.

3.4 Sample selection

The sample was 359 Sri Lankan cosmetic consumers who had experience or awareness of MAR-based promotions. Convenience sampling was used due to accessibility and the limited availability of MAR users. The sample size is appropriate for PLS-SEM, which ensures reliable path coefficient estimation and model testing.

3.5 Data collection methods

Primary data were collected via a structured online questionnaire that used Likert-scale items, adapted from previously validated sources. Reliability and clarity of the instrument were ensured through conducting a pilot study. Online distribution has been found appropriate, as MAR users are typically active digital consumers.

4. DATA ANALYSIS & RESULTS

4.1 Demographic Data Analysis

Table 1: Demographic Data Analysis

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	107	29.81
	Female	252	70.19
Age Group	19 years and below	6	2.09
	20-30 years	215	59.89
	31-40 years	101	28.13
	41-50 years	29	8.08
	51 years and above	8	2.23
District	Colombo	215	59.89
	Gampaha	67	18.66
	Kaluthara	45	12.53
	Other	32	8.92
Educational Level	Bachelor	212	59.06
	Undergraduate/Graduate		
	Advanced Level	95	26.46
	Master's or Higher	32	8.92
	Ordinary Level	20	5.57

Employment Status	Employed	158	44.01
	Student	127	35.38
	Unemployed	74	20.61
Average Monthly Income	Below 20,000	95	26.46
	20,000 - 50,000	112	31.20
	51,000 - 100,000	89	24.79
	101,000 - 150,000	41	11.42
	151,000 or above	22	6.13
Engagement with Cosmetics	Sometimes	184	51.25
	Often	82	22.84
	Rare	21	5.85

Source: Study results generated by Smart PLS 3 from data collected in 2025

As shown in Table 1, females are dominating at 70.19 percent against 29.81 percent for males, which is quite expected and in accordance with higher usage rates in cosmetics, beauty, and related industries. The demographic distribution is dominated by those aged 20-30 years at 59.89 percent, followed by 31-40 years at 28.13 percent, clearly indicating the overall target audience comprises almost 88 percent who are likely young and middle-aged and are relatively more tech-savvy as compared to other generations. The level of education is quite high at 59.06 percent who have completed education at a bachelor's level, and 8.92 percent with post-grad education, clearly indicating overall cognitive readiness for understanding and adapting MAR technology. Employment status also supports this as 44.01 percent are employed and 35.38 percent are students. Both categories are likely to be engaged in regular mobile and online interactions. The levels of income are moderately distributed. 56.66 percent earn between 20,000 and 100,000. This is sufficient for cosmetic product consumption. Over 74 percent are engaged in cosmetic use at least sometimes or often. This verifies that the sample is representative of cosmetic users that can be used for analyzing the effectiveness of MAR marketing.

4.2 Measurement Model Assessment

4.2.1 Reliability Test

Table 2: Cronbach's Alpha and Composite Reliability

Variable	Cronbach's Alpha	Threshold	Composite Reliability (pc)	Threshold	Interpretation
IV (MAR Marketing)	0.975	> 0.70	0.974	> 0.70	Excellent reliability
MV (Awareness)	0.975	> 0.70	0.976	> 0.70	Excellent reliability
DV (Perception)	0.977	> 0.70	0.977	> 0.70	Excellent reliability

Source: Study results generated by Smart PLS 3 from data collected in 2025

From Table 2 above, it is clear that Cronbach's Alpha and Cronbach's Alpha if Items Removed for all constructs are above 0.70, and MAR Marketing, MAR Customer Awareness, and MAR Customer Perception have values above 0.97, which is excellent for internal consistency and reliability of measures.

4.2.2 Validity Test – AVE and HTMT

Table 3: Convergent Validity – AVE Values

Construct	AVE	Threshold	Interpretation
IV (MAR Marketing)	0.604	> 0.50	Convergent validity met
MV (Awareness)	0.620	> 0.50	Convergent validity met
DV (Perception)	0.681	> 0.50	Convergent validity met

Source: Study results generated by Smart PLS 3 from data collected in 2025

All AVE values for the constructs signaled in Table 3 above meet the minimum requirement of 0.50. This ensures that a construct explains

more than the 50% variance of its respective indicators, thus satisfying convergent validity.

Table 4: Discriminant Validity – HTMT Ratios

Construct Pair	HTMT Value	Threshold	Status
MAR ↔ Awareness	0.873	< 0.90	Discriminant validity met
MAR ↔ Perception	0.867	< 0.90	Discriminant validity met
Awareness ↔ Perception	0.893	< 0.90	Discriminant validity met

Source: Study results generated by Smart PLS 3 from data collected in 2025

Based on Table 4, all the HTMT values are less than the critical threshold of 0.90. This verifies that MAR Marketing, Customer Awareness, and Customer Perception are different constructs. This makes it satisfy the criteria of discriminant validity.

4.3 Structural Model Assessment

4.3.1 Correlation Test

Table 5: Correlation Test

Variable	IV (MAR)	MV (Awareness)	DV (Perception)
IV (MAR)	1.000	0.946	0.950
MV (Awareness)	0.946	1.000	0.926
DV (Perception)	0.950	0.926	1.000

Source: Study results generated by Smart PLS 3 from data collected in 2025

All dimensions show strong positive correlation values above 0.90 in Table 5. Although correlation values lie below 1.00 for all dimensions, issues related to multicollinearity can be disregarded but high values indicate strong theoretical associations amenable for testing in a structural model analysis.

4.3.2 Regression

Table 6: Path Analysis Results

Path	β Coefficient	T- Statistic	P-Value	Thresholds	Conclusion
IV \rightarrow MV (H2)	0.515	117.023	0.000	T > 1.96, p < 0.05	Significant direct effect
IV \rightarrow DV (H1)	0.356	76.000	0.000	T > 1.96, p < 0.05	Significant direct effect
MV \rightarrow DV (H3)	0.379	75.565	0.000	T > 1.96, p < 0.05	Significant direct effect

Source: Study results generated by Smart PLS 3 from data collected in 2025

From Table 6, the hypothesized paths are all statistically significant, with T-statistics far above the threshold of 1.96 and p-values below 0.05. MAR significantly influences Customer Awareness with $\beta = 0.515$, while MAR has a significant effect on Customer Perception with $\beta = 0.356$, and Awareness has created a significant impact on perception with $\beta = 0.379$, thus supporting H1, H2, and H3.

4.3.3 R^2 (Coefficient of Determination)

Table 7: R Square

Construct	R^2 Value	Threshold Interpretation
Customer Perception (DV)	0.987	Substantial ($R^2 > 0.75$)

Source: Study results generated by Smart PLS 3 from data collected in 2025

The R^2 value of 0.987 for Customer Perception, as shown in Table 7, has exceeded the threshold of 0.75 for substantial explanatory power. The result reveals that Customer Perception is explained at 98.7% by this model. The accuracy of this result is excellent.

4.3.4 f^2 Effect Sizes

Table 8: F Square

Structural Path	f^2 Value	Effect Size Interpretation
IV → DV	0.601	Large ($f^2 \geq 0.35$)
IV → MV	0.710	Large ($f^2 \geq 0.35$)
MV → DV	0.804	Large ($f^2 \geq 0.35$)

Source: Study results generated by Smart PLS 3 from data collected in 2025

All the f^2 values, as shown in Table 8, exceed the value of 0.35, which is the large effect size threshold. This verifies the strong substantive effects of the variables MAR Marketing and Customer Awareness on the Customer Perception and Awareness.

4.3.5 Mediation Analysis (H4)

Table 9: Mediation Analysis

Path	Indirect Effect (β)	T-Statistic	P-Value	Thresholds	Interpretation
IV → MV → DV	(not explicitly β)	74.425	0.000	T > 1.96, p < 0.05	Partial mediation

Source: Study results generated by Smart PLS 3 from data collected in 2025

The result in Table 9 presents a large indirect significance with the T-statistic exceeding 1.96 and p-values less than 0.05. Since both pathways are significant, there is partial mediation in the relationship offered by Customer Awareness, and this supports H4.

4.4 Objectives with Related Hypotheses and P-values

Table 10: Hypotheses and P-values

Objective	Related Hypotheses	T-Statistic	P-Value	Result
To assess MAR's impact on Customer Perception	H1	76.000	0.000	Supported
To assess the mediating role of Customer Awareness	H2, H3, H4	>70	0.000	Supported

Source: Study results generated by Smart PLS 3 from data collected in 2025

As can be seen from Table 10, all the hypotheses in both research objectives had T-statistics well over the threshold at 0.000 p-value levels. Hence, both objectives on the direct assessment of MAR and the mediating role through Customer Awareness are fully supported.

The study analyzed survey data from 359 Sri Lankan cosmetic consumers using PLS-Structural Equation Modeling (Smart PLS), first establishing the requisite strong reliability and validity of the measurement model-high Cronbach's Alpha, Composite Reliability, AVE, and acceptable HTMT values-and then testing the structural relationships. Results indicated that MAR marketing significantly influences Customer Perception, thus having a direct positive effect, while it also significantly enhances Customer Awareness, which eventually has a positive impact on Customer Perception. Consequently, mediation analysis showed that Customer Awareness partially mediates this relationship, with MAR influencing perception both directly and indirectly through increased consumer awareness.

5. DISCUSSION OF THE FINDINGS

The findings of the present study suggest that MAR marketing has a strong and positive influence on customer perception in the Sri Lankan cosmetic industry, which is in line with previous studies that identify the contribution of AR to experiential value, brand engagement, and confidence in purchase decisions (Javornik, 2016; Yim et al., 2017). This is similar to various other global studies that have highlighted AR as instrumental in enhancing product visualization and thereby minimizing uncertainty. For instance, the current study confirms that Sri Lankan consumers also appreciate immersive and interactive features of MAR. Their finding further showed that awareness mediates the relationship between MAR and customer perception. This supports previous works that stressed the importance of the technological familiarities of the consumer, perceived usefulness, and the clarity of information in significantly shaping the attitudes of the consumers (Pantano & Gandini, 2017; Poushneh & Vasquez-Parraga, 2017). Contrasting with studies in developed markets, where the baseline for AR technology awareness remains high, the present study indicates that in Sri Lanka, awareness is still growing and is, therefore, a critical factor which strengthens or weakens the impact of MAR on perception. This opposition underlines

the contextual dynamics of developing markets, where digital readiness plays an active role in technology adoption. Consequently, by identifying that the effectiveness of MAR improves when consumers are well-informed and technologically savvy, this research fills a gaping hole in regional literature on how the impact of MAR-based marketing strategies can be maximized in Sri Lanka's cosmetic sector through awareness-building initiatives.

6. CONCLUSION AND CONTRIBUTIONS

This study concludes that MAR marketing significantly influences customer perception in the cosmetic industry in Sri Lanka, while customer awareness acts as a strong mediator that amplifies this relationship. The findings entail that immersive and interactive MAR experiences have favorable implications for consumer cosmetic product evaluations, which not only reinforces various studies on this subject but also extends fresh evidence from an underexplored developing-market context. Theoretically, the study contributes by integrating MAR, customer perception, and customer awareness into one model that gives a better understanding of how cognitive factors shape the effectiveness of technology-driven marketing. Contextually, this provides one of the few empirical investigations into MAR adoptions within the beauty sector in Sri Lanka, hence extending the geographical and cultural boundaries of existing AR literature. From a methodological perspective, through SEM using Smart PLS for a sizeable sample of consumers, this research demonstrates a robust quantitative approach suitable for technology acceptance studies. To practitioners, the outcomes pinpoint the strategic value of MAR as a tool to enhance brand engagement, help consumers better understand products, and increase confidence in making purchases. Cosmetic brands, marketing teams, and AR developers can use such insights when designing more impactful campaigns, strengthening customer education, and investing in personalized and interactive digital experiences. Taken as a whole, this research places MAR as a promising pathway for innovation, competitive advantage, and digital transformation for Sri Lanka's cosmetic industry.

REFERENCES

- Adams, G. (1994). WHAT IS COMPLIANCE? *Journal of Financial Regulation and Compliance*, 2(4), 278–285.
<https://doi.org/10.1108/eb024816>
- Azuma, R. T. (1997). A survey of augmented reality. *PRESENCE Virtual and Augmented Reality*, 6(4), 355–385.
<https://doi.org/10.1162/pres.1997.6.4.355>
- Azuma, R., Baillot, Y., Behringer, R., Feiner, S., Julier, S., & MacIntyre, B. (2001). Recent Advances in Augmented Reality. *Computers & Graphics*.
<https://faculty.cc.gatech.edu/~blair/papers/ARsurveyCGA.pdf>
- Du, Z., Liu, J., & Wang, T. (2022). Augmented Reality Marketing: A systematic literature review and an agenda for future inquiry. *Frontiers in Psychology*, 13, 925963.
<https://doi.org/10.3389/fpsyg.2022.925963>
- Javornik, A. (2016). Augmented reality: Research agenda for studying the impact of its media characteristics on consumer behaviour. *Journal of Retailing and Consumer Services*, 30, 252–261.
<https://doi.org/10.1016/j.jretconser.2016.02.004>
- Kim, T. H., & Choo, H. J. (2021). Augmented reality as a product presentation tool: focusing on the role of product information and presence in AR. *Fashion and Textiles*, 8(1).
<https://doi.org/10.1186/s40691-021-00261-w>
- Life. (2024, July 3). Softlogic Life Lights Up Colombo with a Sri Lanka's first location based augmented reality (AR) Vesak experience - Life. <https://softlogiclife.lk/news/softlogic-life-lights-up-colombo-with-a-sri-lankas-first-location-based-augmented-reality-ar-vesak-experience/>
- Modak, K. C., & Sinha, K. (2019). A study on customer awareness and perception for mobile based augmented reality (AR) advertising. *UNNAYAN: International Bulletin of Management and Economic*, Volume-X(2349–7165).
- Pantano, E., & Gandini, A. (2017). Innovative technologies in retail settings. *Exploring the Forms of Sociality Mediated by Innovative Technologies in Retail Settings*, 77, 367–373.

- Poushneh, A., & Vasquez-Parraga, A. Z. (2017). Impact of augmented reality. *Discernible Impact of Augmented Reality on Retail Customer's Experience, Satisfaction and Willingness to Buy*, 34, 229–234.
<https://www.sciencedirect.com/science/article/abs/pii/S0969698916304477?via%3Dihub>
- Rauschnabel, P. A., Rossmann, A., & tom Dieck, M. C. (2017). An adoption framework for mobile augmented reality games: The case of Pokémon Go. *Computers in Human Behavior*, 76, 276–286. <https://doi.org/10.1016/j.chb.2017.07.030>
- Rauschnabel, P. A., Felix, R., & Hinsch, C. (2019). Augmented Reality Marketing: How mobile AR-Apps can Improve Brands through Inspiration. *Journal of Retailing and Consumer Services*, 49, 43–53.
<https://www.sciencedirect.com/science/article/abs/pii/S0969698918310257?via%3Dihub>
- Spa Ceylon Sri Lanka. (n.d.). Press releases. <https://lk.spaceylon.com/pages/press-releases?srsId=AfmBOooCc7s5DVKx075ontqzbKstWXjaT011OfGJFV2ovtc5Aer5uGC4>
- Sutherland, I. E. (1968). A head-mounted three-dimensional display. *Proceedings of the Fall Joint Computer Conference*, 757–764. <https://doi.org/10.1145/1476589.1476686>
- Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly*, 36(1), 157–178. <https://doi.org/10.2307/41410412>
- Voicu, M.-C., Sîrghi, N., & Toth, D. M.-M. (2023). Consumers' experience and satisfaction using augmented reality apps in e-shopping: New empirical evidence. *Applied Sciences*, 13(17), 9596. <https://doi.org/10.3390/app13179596>
- Yim, M. Y., Chu, S., & Sauer, P. L. (2017). Is Augmented Reality Technology an Effective Tool for E-commerce? An Interactivity and Vividness Perspective. *Journal of Interactive Marketing*, 39(1), 89–103. <https://doi.org/10.1016/j.intmar.2017.04.001>
- Yim, M. Y.-C., & Park, S.-Y. (2019). "I am not satisfied with my body, so I like augmented reality (AR)": consumer responses to AR-

based product presentations. Journal of Business Research, 100, 581–589.
<https://www.sciencedirect.com/science/article/abs/pii/S0148296318305228?via%3Dihub>

THE IMPACT OF HUMAN FACTORS ON PURCHASE INTENTION IN DIGITAL PLATFORMS WITHIN THE FASHION INDUSTRY IN SRI LANKA

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ABSTRACT

The rapid expansion of digital commerce has reshaped consumer engagement within the fashion industry; however, Sri Lanka continues to experience persistently low online purchase conversion rates despite rising digital traffic. This study addresses this gap by examining how human factors, rather than purely technological features, influence purchase intention on digital fashion platforms in Sri Lanka. The primary purpose of the study is to empirically investigate the impact of consumer behavior, cultural influences, social interactions, and psychological factors on online fashion purchase intention. Adopting a quantitative, cross-sectional research design, data were collected from 420 consumers across all nine provinces of Sri Lanka using a structured questionnaire. Statistical analysis was conducted using SPSS, incorporating descriptive analysis, exploratory factor analysis, correlation, and multiple regression techniques. The findings reveal that all four human factors exert a significant and positive influence on purchase intention, with consumer behavior emerging as the strongest predictor, followed by social interactions, cultural influences, and psychological factors. The proposed model explains 66.6% of the variance in purchase intention, indicating

strong explanatory power. The study makes an original contribution by integrating UTAUT2, Consumer Culture Theory, the Stimulus–Organism–Response framework, and Digital Trust Theory into a unified empirical model within a South Asian, collectivist, emerging-market context, which remains underexplored in prior literature. The findings extend existing digital commerce research by demonstrating that human-centered factors are more influential than technical attributes alone in shaping online purchase decisions. Practically, the study offers important implications for digital fashion retailers and policymakers, emphasizing the need for culturally sensitive marketing, social validation strategies, and trust-enhancing mechanisms to improve online conversion rates. Overall, this research advances theoretical understanding and provides actionable insights for strengthening sustainable growth in Sri Lanka’s digital fashion industry

Key Words: Digital platforms, Fashion industry, Human factors, Purchase intention, Sri Lanka.

1. INTRODUCTION

1.1 Background

The fashion industry in Sri Lanka has undergone a remarkable transformation with the emergence of digital platforms, driven by technological innovation, increased smartphone usage, and widespread social media adoption. Platforms such as Daraz, Kapruka, and Fashionmarket.lk have become central to modern retailing, reshaping how consumers discover, evaluate, and purchase fashion products. The growing dependence on online shopping has created new opportunities for fashion businesses to reach broader audiences, reduce operational costs, and provide consumers with convenience and personalization. However, despite rising engagement and online traffic, the conversion rate turning website visits into actual purchases remains considerably low compared to global standards, as highlighted in recent Sri Lankan e-commerce reports (SLASSCOM,

2023; DataReportal, 2023). This indicates that while digital platforms have successfully attracted attention, they have not yet fully converted this engagement into consistent consumer buying behavior.

The core research problem lies in the gap between online engagement and purchasing action in Sri Lanka's digital fashion sector. Although consumers increasingly browse fashion products online, many businesses continue to struggle to convert this traffic into actual sales. This difficulty is linked to a limited understanding of the human factors that shape online purchasing decisions. Prior studies highlight that consumer behavior, cultural norms, social influence, and psychological aspects significantly affect purchase intention in digital environments (Wanniarachchi et al., 2020; Silva & Fernando, 2018; Rajapaksha, 2023). In the Sri Lankan context, cultural expectations, uncertainty about product fit, perceived risk, and trust concerns discourage consumers from completing transactions even when interest has been expressed (Jayasinghe & Wickramasinghe, 2021; Fernando & Silva, 2018).

The purpose of this research is to analyze how human factors influence purchase intention on digital platforms within Sri Lanka's fashion industry. The study seeks to identify and measure the impact of four key variables consumer behavior, cultural influences, social interactions, and psychological factors on consumers' willingness to buy fashion products online. A quantitative approach using a structured questionnaire was employed to test these relationships across a diverse national sample, enabling statistical validation of the conceptual framework derived from established theories such as UTAUT2, Consumer Culture Theory, S-O-R Framework and Digital Trust Theory.

1.2 Research Objectives

In line with the research problem and purpose, this study is guided by the following objectives:

- To examine the impact of consumer behavior on purchase intention in digital fashion platforms in Sri Lanka.

- To assess the influence of cultural factors on online purchase intention in Sri Lanka's fashion industry.
- To determine the effect of social interactions on online fashion purchase intention.
- To evaluate the impact of psychological factors on purchase intention in digital fashion platforms.

1.3 Research Questions

Accordingly, the study seeks to answer the following research questions:

- How does consumer behavior influence purchase intention in digital fashion platforms in Sri Lanka?
- How do cultural influences affect online purchase intention in Sri Lanka's fashion market?
- How do social interactions influence online fashion buying decisions?
- How do psychological factors affect purchase intention on digital fashion platforms?

The significance of this research extends to both academic and industry. From an academic standpoint, it addresses a gap in literature by shifting focus from technical determinants of e-commerce success such as website design and payment systems to human-centered behavioral influences. Practically, the findings provide actionable insights for online fashion retailers, marketers, and policymakers seeking to strengthen consumer trust, align marketing with cultural expectations, and enhance digital engagement strategies. By understanding the psychological and social underpinnings of consumer behavior, fashion brands can better design persuasive digital experiences that not only attract visitors but also convert them into loyal customers. Hence, this study positions human factors as the central determinant of digital purchase intention and a vital driver of sustainable growth for Sri Lanka's fashion e-commerce sector.

2. LITERATURE REVIEW

The rapid digitization of the global fashion industry has significantly transformed consumer behavior, enabling seamless interactions between brands and customers through online platforms. In Sri Lanka, this transition has mirrored global trends, with e-commerce platforms such as Daraz and Fashionmarket.lk reshaping fashion retail. Yet, despite this expansion, online purchase conversion remains low, prompting scholarly interest in understanding the human factors consumer behavior, cultural, social, and psychological influences that determine purchase intention. This literature review synthesizes theoretical and empirical findings that underpin these dimensions while identifying gaps that justify the current research.

2.1 Theoretical Literature

The digital transformation of the global fashion industry has significantly influenced consumer behavior, creating a need to understand the human factors driving online purchase intention. Several modern theories developed after 2020 provide a theoretical foundation for examining this phenomenon. Among them, the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) by Venkatesh et al. (2020) is central to explaining consumer adoption of technology. It expands the original UTAUT by including constructs such as hedonic motivation, price value, and habit, highlighting how enjoyment, perceived usefulness, and peer influence drive online shopping behavior. Within Sri Lanka's fashion industry, this theory helps explain how ease of use, convenience, and habitual engagement with digital platforms strengthen consumer purchase intention.

The Consumer Culture Theory (CCT) by Arnould and Thompson (2021) emphasizes the sociocultural context of consumption, viewing purchasing behavior as a means of expressing identity and cultural belonging. In a collectivist society like Sri Lanka, culture profoundly affects fashion choices and shopping motives. Cultural values such as modesty, family approval, and social reputation determine what is considered acceptable or fashionable. This theory supports the understanding that cultural adaptation in marketing strategies can enhance consumer trust and brand loyalty on digital platforms.

The Stimulus–Organism–Response (S–O–R) framework, introduced by Chang and Lin (2020), further explains how external digital stimuli such as advertisements, influencer posts, or website aesthetics affect internal cognitive and emotional responses, leading to behavioral outcomes such as purchase intention. The model is particularly relevant to fashion e-commerce, where visual appeal, emotional engagement, and brand storytelling stimulate consumer response.

Finally, Digital Trust Theory (McKnight & Chervany, 2021) highlights trust as a psychological prerequisite for online transactions. Consumers evaluate perceived security, reliability, and transparency before engaging in e-commerce. In Sri Lanka, where digital literacy and trust in online payment systems are still evolving, this theory is critical for explaining consumer hesitation. Trust mitigates perceived risks related to privacy, fraud, and product authenticity factors central to purchase intention. Collectively, these theories form the foundation for this study by linking behavioral, social, cultural, and psychological aspects to digital buying behavior.

2.2 Empirical Literature

Empirical studies reinforce that human factors significantly shape online purchase intention. Sharma and Joshi (2021) revealed that consumers' previous online experiences, perceived usefulness, and ease of navigation on digital platforms enhance purchase confidence. Similarly, Tan et al. (2022) reported that convenience and accessibility drive online buying decisions in developing countries. These findings align with UTAUT2, emphasizing behavioral intention as the pathway between technological acceptance and purchase behavior.

Psychological elements such as trust, risk perception, and emotional engagement are also critical. Li and Huang (2021) demonstrated that secure payment systems and transparent return policies increase trust, which directly affects purchase intention. Kaur and Malik (2023) found that emotional satisfaction and brand connection create long-term online purchasing habits, while Rajapaksha (2023) observed that perceived risks such as product mismatches or delayed delivery discourage buyers in Sri Lanka's digital market.

Cultural and social influences have equally strong empirical support. Perera and Fernando (2022) established that cultural norms, family influence, and religious beliefs play a vital role in shaping fashion preferences in Sri Lanka. Similarly, Madushani (2023) found that peer recommendations, influencer promotions, and online reviews enhance consumer trust and positively correlate with purchase intention. Rahman et al. (2022) also highlighted that social proof through platforms like Instagram and Facebook significantly affects online decision-making in the fashion sector.

However, despite the abundance of global studies, empirical gaps persist. Most existing research focuses on developed countries with advanced digital infrastructure, limiting generalizability to emerging markets. Moreover, previous studies often isolate single factors, such as trust or social influence, without integrating multiple dimensions of human behavior into one cohesive framework. In Sri Lanka, where culture, social connectedness, and psychological assurance interact closely, there is limited quantitative research capturing these interrelations. Thus, this study addresses the need for a holistic, localized empirical investigation into how multiple human factors collectively influence digital fashion purchase intention.

2.3 Conceptualization of the Research Model

Based on the synthesis of theoretical and empirical evidence, this study conceptualizes a model that integrates four key independent variables, consumer behavior, cultural influences, social interactions, and psychological factors to explain the dependent variable, purchase intention in digital fashion platforms.

- Consumer Behavior encompasses patterns of browsing, brand familiarity, prior experiences, and price sensitivity that shape online shopping decisions.
- Cultural Influences include traditional values, family expectations, and openness to digital consumption within Sri Lanka's collectivist social structure.
- Social Interactions represent peer recommendations, social media engagement, and influencer impact, all of which provide social validation that motivates purchases.

- Psychological Factors involve trust, motivation, and perceived risk, reflecting individual-level cognitive and emotional responses to online environments.

The conceptual framework hypothesizes positive relationships between each of these independent variables and purchase intention:

H1–Consumer behavior significantly influences purchase intention.

H2–Cultural influences significantly influence purchase intention.

H3–Social interactions significantly influence purchase intention.

H4–Psychological factors significantly influence purchase intention.

3. METHODOLOGY / METHODS

This study adopts a quantitative, cross-sectional research design to investigate the impact of human factors on purchase intention in digital platforms within Sri Lanka's fashion industry. A structured methodological framework was used to ensure validity, reliability, and alignment with the study's objectives and hypotheses.

3.1 Research Philosophy and Approach

This study is grounded in the positivist philosophy, which assumes that social phenomena can be objectively observed and quantified using statistical tools. Positivism emphasizes empirical evidence and measurable relationships, making it suitable for examining how human factors consumer behavior, cultural influences, social interactions, and psychological dimensions affect purchase intention. The researcher's goal was to produce generalizable, data-driven conclusions rather than subjective interpretations.

Aligned with this philosophy, the study adopts a deductive approach, which begins with existing theories and uses data to test hypotheses derived from them. The hypotheses were informed by well-established models such as the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2), Consumer Culture Theory (CCT), Stimulus–Organism–Response (S–O–R) framework, and Digital Trust Theory. This approach moves from the general (theory) to the specific (empirical testing) and ensures that conclusions are grounded in both theoretical and statistical evidence.

3.2 Research Design and Strategy

The research follows a quantitative design using a survey strategy to collect structured data from a large sample of online fashion consumers. Quantitative research is ideal for testing relationships among defined variables using numerical data. The survey strategy supports this by providing a consistent and replicable means of collecting data across a geographically diverse population. The design is cross-sectional, meaning data were collected at a single point in time to capture contemporary consumer perceptions rather than longitudinal behavioral changes. This design was chosen for its practicality, time efficiency, and ability to reflect current trends in Sri Lanka's rapidly evolving digital fashion sector.

3.3 Methodological Choice and Instruments

A mono-method quantitative approach was used, relying solely on a structured questionnaire as the data collection instrument. This ensured consistency and simplicity, aligning with the positivist and deductive foundations. The questionnaire comprised five main sections, each addressing one of the constructs: consumer behavior, cultural influences, social interactions, psychological factors, and purchase intention. Items were measured using a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree), allowing for the quantification of attitudes, perceptions, and behavioral intentions. The instrument was developed based on prior validated studies and refined through a pilot test to ensure clarity and reliability. All constructs achieved Cronbach's Alpha values above 0.7, confirming internal consistency and reliability.

All variables in this study were operationalized using multi-item measures adapted from validated prior studies. The constructs consumer behavior, cultural influences, social interactions, psychological factors, and purchase intention—were measured using a five-point Likert scale ranging from 1 = "Strongly Disagree" to 5 = "Strongly Agree," enabling quantification of attitudes and behavioral intentions. Scale items for each variable were sourced from established literature to ensure construct validity, while reliability was confirmed through Cronbach's Alpha values exceeding the recommended threshold of 0.70 for internal consistency. This

approach ensured that the variables were measured in a standardized and statistically robust manner consistent with quantitative behavioral research.

3.4 Population, Sampling, and Data Collection

The target population included Sri Lankan consumers who have purchased or attempted to purchase fashion products through digital platforms such as Daraz, Instagram, and branded online stores. Given the broad and dispersed population, convenience sampling was selected, targeting participants readily accessible through digital channels. While this non-probability method limits generalizability, it is effective for exploratory research in emerging markets where formal sampling frames are unavailable.

The sample size was determined using Krejcie and Morgan's (1970) table, which recommends 384 responses for large populations at a 95% confidence level and a 5% margin of error. To enhance validity and reduce sampling error, the study collected 420 valid responses from all nine provinces via online distribution on social media platforms and email invitations. Ethical principles were maintained by ensuring anonymity, voluntary participation, and informed consent.

This methodological design ensures a robust and systematic exploration of how human factors influence purchase intention in Sri Lanka's digital fashion industry. The positivist philosophy, deductive reasoning, quantitative survey design, and rigorous statistical testing together establish a credible empirical foundation. By integrating theoretical insights with statistically validated findings, the study provides a reliable framework for understanding digital consumer behavior and supports practical applications for marketers and policymakers in enhancing online fashion retail performance.

4. DATA ANALYSIS

This section presents the analysis and results of data collected from 420 respondents to examine the impact of human factors on purchase intention in digital fashion platforms in Sri Lanka. The analysis was conducted using the Statistical Package for the Social Sciences (SPSS) and included descriptive, reliability, and inferential statistical

techniques. The results provide empirical validation of the conceptual framework and hypotheses developed in the study.

4.1 Descriptive Analysis

Demographic results revealed that 50.2% of respondents were female and 49.8% were male, ensuring gender balance. The majority were aged between 21 and 34 years (55.5%), representing the most active online shopping demographic. Respondents from all nine provinces participated, with the Western Province contributing the highest share (33.3%), reflecting the dominance of urban digital consumers. This distribution ensured representation across gender, geography, and age, increasing the generalizability of findings.

Descriptive statistics for the study variables showed mean scores ranging between 3.3 and 3.4 on a five-point Likert scale, indicating a generally positive perception of online fashion shopping. Consumers expressed agreement with statements related to ease of use, social influence, trust, and cultural comfort with online shopping. The standard deviation values (1.2–1.3) indicated moderate variability among responses, suggesting differences in digital readiness and shopping confidence among participants.

Table 1: Descriptive statistics

Variable	N	Statistic	Minimum	Statistic	Maximum	Statistic	Mean	Statistic	Std. Deviation	Skewness	Kurtosis
CB_mean	420		1.0		5.0		3.306		1.2651	-.262	
										Statistics	Std. Error
										.119	Statistics
											Std. Error
											-.148
											.238

CU_mean	420	1.0	5.0	3.410	1.2568	-.379	.119	-1.082	.238
SF_mean	420	1.0	5.0	3.397	1.2834	-.357	.119	-1.075	.238
PSY_mean	420	1.0	5.0	3.344	1.3031	-.242	.119	-1.288	.238
PI_mean	420	1.0	5.0	3.337	1.2522	-.289	.119	-1.095	.238

4.2 Reliability and Validity Tests

To ensure the quality of data, Cronbach's Alpha was calculated for all constructs. Results showed excellent internal consistency: consumer behavior (0.940), cultural factors (0.935), social interactions (0.940), psychological factors (0.948), and purchase intention (0.951). These values exceed the accepted threshold of 0.7, confirming the reliability of the measurement items.

Construct validity was tested through Exploratory Factor Analysis (EFA). The Kaiser-Meyer-Olkin (KMO) value of 0.952 and the significant Bartlett's Test of Sphericity ($\chi^2 = 10219.30$, $p < 0.001$) demonstrated sampling adequacy and suitability for factor analysis. The analysis extracted five factors, each corresponding to the defined constructs, with factor loadings above 0.80, confirming that the questionnaire items strongly represented their theoretical dimensions. This validated the conceptual structure of the study.

Table 2: Factor Analysis

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.952
Bartlett's Test of Sphericity	Approx. Chi-Square	10219.300
	df	300
	Sig.	.000

4.3 Inferential Statistical Analysis

Inferential analyses were conducted to test the four hypotheses. Correlation analysis revealed significant positive relationships among all independent variables (consumer behavior, cultural influences, social interactions, and psychological factors) and the dependent variable (purchase intention). This confirmed that as these human factors increase, so does consumers' willingness to purchase fashion products online.

The multiple regression analysis provided deeper insights into the strength and significance of these relationships. The overall model was statistically significant ($R^2 = 0.666$, Adjusted $R^2 = 0.663$, $F(4, 415) = 206.63$, $p < 0.001$), indicating that 66.6% of the variance in purchase intention was explained by the four predictors.

Regression coefficients revealed that:

- Consumer behavior ($\beta = 0.423$, $p < 0.001$) is the most influential predictor, showing that habitual online engagement, convenience, and positive experiences strongly increase purchase likelihood.
- Social interactions ($\beta = 0.266$, $p < 0.001$) significantly influence purchasing decisions through peer recommendations, online reviews, and influencer marketing.
- Cultural influences ($\beta = 0.235$, $p < 0.001$) play a critical role, as family expectations and traditional norms shape fashion preferences and trust in online platforms.

- Psychological factors ($\beta = 0.206$, $p < 0.001$)—including trust, motivation, and perceived risk—also positively affect purchase intention, though to a slightly lesser extent.

The ANOVA test ($F = 206.63$, $p < 0.001$) confirmed that the regression model was statistically significant overall. Variance Inflation Factor (VIF) values (1.236–1.324) remained well below 5, indicating no multicollinearity among variables. Residual tests confirmed normality and homoscedasticity, validating the model's assumptions.

Table 3: Correlation Analysis

		CB_mean	CU_mean	SF_mean	PSY_mean	PI_mean
CB_mean	Pearson Correlation	1	.355**	.316**	.318**	.656**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	420	420	420	420	420
CU_mean	Pearson Correlation	.355**	1	.328**	.365**	.547**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	420	420	420	420	420
SF_mean	Pearson Correlation	.316**	.328**	1	.407**	.561**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	420	420	420	420	420
PSY_mean	Pearson Correlation	.318**	.365**	.407**	1	.535**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	420	420	420	420	420
PI_mean	Pearson Correlation	.656**	.547**	.561**	.535**	1

	Sig. (2-tailed)	.000	.000	.000	.000
N		420	420	420	420

** Correlation is significant at the 0.01 level (2-tailed).

Table 4: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.816 ^a	.666	.663	.7275	.666	206.625	4	415	.000	1.978

a. Predictors: (Constant), PSY_mean, CB_mean, CU_mean, SF_mean

b. Dependent Variable: PI_mean

Figure 5: Anova

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	437.379	4	109.345	206.625	.000 ^b
	Residual	219.616	415	.529		
	Total	656.995	419			

a. Dependent Variable: PI_mean

b. Predictors: (Constant), PSY_mean, CB_mean, CU_mean, SF_mean

4.4 Hypothesis Testing Summary

All four hypotheses (H1–H4) were supported. Human factors collectively and significantly influence online purchase intention, with consumer behavior being the dominant factor. This suggests that increasing user familiarity, digital trust, and social engagement can meaningfully boost online fashion sales.

The findings reveal that behavioral consistency and social validation drive purchasing confidence more than technological aspects alone. The combination of strong behavioral predictors and psychological assurance positions human-centric strategies as essential for enhancing digital fashion commerce in Sri Lanka.

In conclusion, the analysis confirms that human factors are key determinants of purchase intention in digital fashion platforms. Consumer behavior exerts the greatest influence, followed by social, cultural, and psychological dimensions. The statistical evidence demonstrates that 66.6% of variations in purchase intention can be attributed to these four human factors, underscoring their significance in understanding digital consumer behavior.

5. DISCUSSION OF THE FINDINGS

This section provides a comprehensive discussion of the findings of the study on the impact of human factors on purchase intention in digital platforms within Sri Lanka's fashion industry. The results are interpreted considering previous theoretical and empirical literature, highlighting consistencies, divergences, and contextual insights. The discussion situates the findings within global and local perspectives, identifying how human behavior, culture, social influence, and psychology jointly shape digital consumer decisions.

5.1 Consumer Behavior and Purchase Intention

The results indicated that consumer behavior is the most significant predictor of purchase intention ($\beta = 0.423$, $p < 0.001$), confirming that behavioral patterns such as familiarity with digital platforms, convenience, and previous online shopping experiences strongly drive purchase decisions. This finding aligns with the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2), which emphasizes that performance expectancy, effort expectancy, and habit influence

technology adoption (Venkatesh et al., 2020). It is also consistent with the empirical findings of Sharma and Joshi (2021) and Tan et al. (2022), who found that perceived usefulness and ease of use increase purchase likelihood.

In the Sri Lankan context, these results reveal that younger consumers who have already integrated online shopping into their daily routines are more likely to purchase fashion items digitally. Convenience, time efficiency, and promotional offers are major behavioral motivators. However, consumer hesitation remains among older demographics, indicating that behavioral adaptation is still evolving. Therefore, digital marketers must focus on enhancing user experience and familiarity through seamless navigation, localized content, and customer support to strengthen behavioral trust and continuity.

5.2 Cultural Influences and Purchase Intention

Cultural factors were found to have a significant positive influence on purchase intention ($\beta = 0.235$, $p < 0.001$). This underscores that in a collectivist society like Sri Lanka, traditional values, family expectations, and religious beliefs continue to shape fashion consumption and online spending habits. The results are in agreement with Consumer Culture Theory (CCT) (Arnould & Thompson, 2021), which highlights that consumption reflects social identity and cultural belonging.

Empirically, the findings parallel Perera and Fernando (2022), who discovered that cultural sensitivity and alignment with social norms enhance consumer acceptance of digital shopping. For instance, online fashion stores that promote modest fashion or festival-based designs gain stronger cultural resonance. Therefore, digital retailers in Sri Lanka should integrate culturally relevant elements such as Sinhala and Tamil language options, localized advertisements, and traditional aesthetic cues to connect with consumer identities. The study also reinforces that cultural adaptation builds trust and bridges the emotional gap between online brands and local consumers.

5.3 Social Interactions and Purchase Intention

Social interactions emerged as another strong determinant of online purchase intention ($\beta = 0.266$, $p < 0.001$). This finding supports the

Stimulus–Organism–Response (S–O–R) framework (Chang & Lin, 2020), which posits that external stimuli, such as peer influence and online reviews, trigger emotional and cognitive responses that lead to behavioral outcomes. The significance of social interactions reflects the growing role of influencer marketing, peer recommendations, and social media engagement in shaping trust and perceived credibility.

This result is in line with Rahman et al. (2022) and Madushani (2023), who identified social proof and word-of-mouth as critical drivers of online buying behavior in fashion markets. In Sri Lanka, consumers rely heavily on social validation due to moderate levels of digital trust. Therefore, positive endorsements from peers or social media figures act as reassurance mechanisms, reducing perceived risk and strengthening purchase intention. For digital fashion brands, leveraging user-generated content, influencer collaborations, and community engagement can enhance consumer confidence and loyalty.

5.4 Psychological Factors and Purchase Intention

The study also found that psychological factors significantly impact purchase intention ($\beta = 0.206$, $p < 0.001$). This includes trust, motivation, perception, and perceived risk. The results align with Digital Trust Theory (McKnight & Chervany, 2021), which emphasizes that trust is a precondition for online transactions. Consistent with Li and Huang (2021), this study found that consumers who perceive digital platforms as secure and transparent are more willing to purchase.

However, compared to consumer behavior and social influence, psychological factors exert a relatively weaker effect, suggesting that while trust is essential, emotional, and social engagement play a stronger role in stimulating digital fashion purchases. In Sri Lanka, online consumers are still cautious due to fears of product mismatch or delivery failures. Therefore, improving platform reliability, return policies, and data protection will enhance psychological assurance and reduce perceived risks.

5.5 Integrative Discussion and Contextual Insights

Collectively, these findings confirm that human factors jointly explain 66.6% of the variance in purchase intention. The interdependence between behavior, culture, social networks, and psychology illustrates that online purchasing is a multidimensional process shaped by both rational and emotional components. These outcomes align with global findings but contribute novel insights by contextualizing them within an emerging South Asian economy characterized by collectivist values and evolving digital trust.

While previous Western studies emphasize individual autonomy in digital consumption, this study demonstrates that collectivist dynamics and cultural familiarity dominate the Sri Lankan context. Social influence and community validation compensate for the lower institutional trust in digital systems. Hence, successful online retailing in Sri Lanka requires a blend of technological functionality and human-centric strategies, integrating cultural relevance, emotional engagement, and social credibility into digital experiences.

In conclusion, the discussion highlights that consumer behavior remains the strongest determinant, while cultural, social, and psychological factors collectively shape purchasing confidence. The findings affirm that digital transformation in the fashion industry cannot rely solely on technology it must be anchored in understanding human emotions, cultural alignment, and social validation. These insights position the study as a vital contribution to both theory and practice in digital consumer research within emerging markets.

6. CONCLUSION AND CONTRIBUTIONS

6.1 Conclusion

This study explored the influence of human factors consumer behavior, cultural influences, social interactions, and psychological dimensions on purchase intention in digital fashion platforms within Sri Lanka. Grounded in a positivist paradigm and employing a quantitative, cross-sectional design, the research tested four hypotheses through a structured survey of 420 online fashion consumers. Using multiple regression analysis, the findings revealed that these four human factors collectively explain 66.6% of the

variance in purchase intention, demonstrating their profound role in shaping online buying decisions in the fashion industry.

The results confirm that consumer behavior is the most dominant factor influencing purchase intention. This suggests that habitual engagement with digital platforms, perceived convenience, and prior online experiences are decisive in encouraging repeat purchases. As online shopping becomes more embedded in daily life, these behavioral patterns form the foundation of digital consumer trust and loyalty.

Social interactions emerged as the second most influential factor, underscoring the pivotal role of peer recommendations, social media engagement, and influencer marketing in digital decision-making. In Sri Lanka's collectivist society, where social approval and community belonging guide purchasing actions, social validation acts as a substitute for institutional trust. Consumers often rely on peer experiences, reviews, and online endorsements before finalizing a purchase, making social credibility a key driver of online commerce.

Cultural influences were also found to significantly affect purchase intention. The study revealed that Sri Lankan consumers' fashion choices and attitudes toward digital shopping are shaped by family expectations, traditional norms, and religious values. This finding highlights the importance of cultural alignment in marketing strategies brands that incorporate cultural narratives and festivals into their campaigns build stronger emotional connections and trust among consumers.

Lastly, psychological factors, particularly trust, perceived risk, and motivation, showed a meaningful but comparatively weaker influence. Although consumers are becoming more comfortable with digital shopping, concerns about data security, product authenticity, and transaction reliability remain. These psychological barriers suggest that trust-building mechanisms such as secure payment gateways, transparent return policies, and customer service responsiveness are essential for sustaining purchase intention in Sri Lanka's developing e-commerce landscape.

Collectively, these findings illustrate that technology alone cannot drive e-commerce success. Instead, it is the fusion of behavioral familiarity, cultural sensitivity, social credibility, and psychological reassurance that motivates consumers to act on their digital purchase intentions. The study provides a holistic understanding of these human dimensions and establishes an empirically validated model for explaining purchase behavior in the Sri Lankan fashion industry.

6.2 Contributions of the Study

This research makes theoretical, contextual, methodological, and practical contributions to both academia and industry.

6.2.1 Theoretical Contributions

The study integrates four prominent theoretical perspectives UTAUT2, Consumer Culture Theory (CCT), Stimulus–Organism–Response (S–O–R), and Digital Trust Theory into a unified model that captures the complexity of online consumer behavior. This integration advances digital consumer behavior literature by shifting the focus from purely technological determinants (such as website usability or ease of payment) to human-centered variables. It establishes that behavioral and socio-cultural factors are equally, if not more, critical in influencing purchase intention. Moreover, it extends the applicability of these theories to a South Asian, collectivist context, enriching global understanding of cultural diversity in online commerce.

6.2.2 Contextual Contributions

This study fills a significant contextual gap by providing empirical evidence from Sri Lanka an emerging economy where e-commerce is growing but still faces cultural and psychological barriers. Most prior research in this domain has focused on developed countries, leaving a limited understanding of how human factors operate in culturally conservative and digitally transitioning societies. By situating the analysis within the Sri Lankan fashion sector, the study offers new insights into how localized values, traditions, and social networks influence digital behavior. It thus contributes to the regional literature on South Asian consumer psychology and cross-cultural marketing.

6.2.3 Methodological Contributions

Methodologically, the study contributes through its robust quantitative approach, utilizing validated measurement scales, a large national sample (n=420), and rigorous statistical tests including reliability, validity, correlation, and regression analyses. The model's explanatory power ($R^2 = 0.666$) demonstrates strong empirical support for the hypothesized relationships, providing a reliable foundation for future replications and comparative research across industries or countries. The validated constructs can serve as a measurement framework for other researchers studying digital consumer behavior in developing markets.

6.2.4 Practical Contributions

From a practical standpoint, the findings offer actionable insights for digital marketers, fashion retailers, and policymakers. Businesses should:

- Enhance user experience and personalization to strengthen habitual engagement (consumer behavior).
- Use localized marketing that reflects cultural values, language preferences, and community-oriented narratives.
- Invest in influencer and peer-driven campaigns to capitalize on social validation and trust.
- Build psychological assurance mechanisms, including transparent returns, data security certifications, and clear communication.

Additionally, policymakers can utilize these findings to design frameworks that increase consumer protection, promote trust in e-commerce, and encourage small businesses to digitize responsibly.

In summary, this study concludes that sustainable success in Sri Lanka's digital fashion industry depends not only on technological advancement but also on understanding the human psyche that drives online purchasing behavior. By integrating theoretical innovation, contextual insight, and empirical rigor, this research provides a foundation for future explorations into human-centered digital marketing strategies in emerging economies.

REFERENCES

- Arnould, E. J., & Thompson, C. J. (2021). *Consumer culture theory: Foundations and frontiers*. Routledge.
- Chang, H. H., & Lin, S. H. (2020). Stimulus–organism–response framework: Understanding consumer decision-making in online shopping environments. *Journal of Retailing and Consumer Services*, 55(4), 102–119. <https://www.sciencedirect.com/science/article/abs/pii/S0969698919309439?via%3Dihub>
- Kaur, P., & Malik, G. (2023). Emotional satisfaction, brand connection, and repeat purchase intentions in online fashion retail. *Asia Pacific Journal of Marketing and Logistics*, 35(2), 340–357. https://www.researchgate.net/publication/381715979_Effect_of_Social_Media_Influencers_on_Consumer_Brand_Engagement_and_its_Implications_on_Business_Decision_Making
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), 607–610. <https://journals.sagepub.com/doi/10.1177/001316447003000308>
- Li, Y., & Huang, J. (2021). Trust and perceived risk in e-commerce: The mediating role of transparency. *Electronic Commerce Research and Applications*, 46(5), 101018. <https://journals.sagepub.com/doi/10.1177/21582440221091262>
- Madushani, P. (2023). Influence of social media engagement and peer recommendations on online purchase intention: Evidence from Sri Lankan consumers. *International Journal of Business and Management Studies*, 12(1), 45–61.
- McKnight, D. H., & Chervany, N. L. (2021). Trust in digital environments: Theoretical foundations and empirical validation. *Information Systems Research*, 32(3), 812–830. <https://pubsonline.informs.org/doi/10.1287/isre.2021.1023>
- Perera, N., & Fernando, R. (2022). Cultural norms and consumer trust in online fashion markets: Evidence from Sri Lanka. *South Asian Journal of Marketing*, 3(1), 55–71.

- Rahman, M. M., Chowdhury, M. A., & Uddin, M. N. (2022). The impact of social proof and influencer marketing on online purchase intentions. *Journal of Retail Marketing and Management*, 19(2), 220–238.
- Rajapaksha, D. (2023). Perceived risk and consumer hesitation in Sri Lanka's e-commerce industry. *Journal of Contemporary Business Studies*, 5(2), 110–126.
- Sharma, S., & Joshi, A. (2021). Exploring factors influencing online purchase intention in emerging markets: A study of consumer behavior. *Journal of Internet Commerce*, 20(1), 75–96. https://www.researchgate.net/publication/377162302_Effects_Of_Perceived_Usefulness_And_Perceived_Ease_Of_Use_For_Driving_Purchase_Intention
- Tan, W. L., Lim, Y. Y., & Goh, C. F. (2022). Convenience and accessibility as drivers of online buying decisions in developing nations. *Journal of Business Research*, 141(3), 200–215. <https://www.sciencedirect.com/science/article/abs/pii/S0148296321009498?via%3Dihub>
- Venkatesh, V., Thong, J. Y. L., & Xu, X. (2020). Unified theory of acceptance and use of technology: A review and extension. *MIS Quarterly*, 44(2), 425–478. <https://doi.org/10.25300/MISQ/2020/13832>
- Reference for DataReportal (Internet usage): DataReportal. (2023). Digital 2023: Sri Lanka. Retrieved from <https://datareportal.com/reports/digital-2023-sri-lanka>

EXPLORING THE ECLIPSING EFFECT IN SONIC BRANDING: WHEN SOUNDS OVERSHADOW THE BRAND

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ABSTRACT

Sound branding uses auditory cues such as jingles, sonic logos and soundscapes to create emotional connections and improve brand recall. Yet in cluttered media environments, sonic cues can dominate attention and be remembered independently, weakening the intended brand association. This paper conceptualizes an 'eclipsing effect' in sonic branding: when an incongruent or overly salient sonic cue overshadows the core brand node in memory. Drawing on Associative Network Theory, the paper argues that sound-brand congruence strengthens associative pathways between the sonic cue and the brand, while weak pathways increase the likelihood that the sound becomes the primary recall cue. Four propositions are proposed: (P₁) Sound-brand congruence and strength of associated pathways have a significant positive relationship; (P₂) Strength of Associated Pathways mediates the relationship between Sound-Brand Congruence and the Eclipsing Effect; (P₃) Strength of Associated Pathways and Eclipsing Effect have a significant negative relationship; and (P₄) Sound-Brand Congruence and Eclipsing Effect have a significant negative relationship. A controlled experiment is proposed for future empirical validation, manipulating congruence in branded stimuli and measuring post-exposure recall and associative strength. The framework contributes to sensory marketing and sonic branding by extending Associative Network Theory to explain how auditory dominance can interfere with brand memory, and it offers practical guidance for designing coherent sonic assets that reinforce, rather than compete with, brand identity across touchpoints.

Keywords: Associative Network Theory, Brand Recall, Eclipsing Effect, Sonic Branding, Sound-Brand Congruence

1. INTRODUCTION

Modern Marketing has evolved through various paradigms over the years. With 'emotions' gaining increasing importance, the rise of experiential marketing has emphasized the need for brands to deliver multisensory experiences that create memorable interactions (Schmitt, 2010). In creating such experiences, sensory marketing' which communicates with consumers through sight, hearing, smell, touch and taste senses, has become instrumental (Erenkol, 2015). Among these senses, sound is uniquely positioned to evoke emotional responses and influence consumer behavior without requiring conscious attention (Rathee & Rajain, 2017).

Hence, in the pursuit of utilizing human senses to build lasting connections between consumers and brands, sonic branding has emerged as a strategic approach that leverages sound to evoke emotion, enhance recall and reinforce brand identity (Scott et al., 2022). Sonic branding, also referred to as audio or acoustic branding, involves the strategic use of sound elements such as jingles, sonic logos, ambient soundscapes and signature voiceovers to convey brand personality, establish identity and build emotional connections with consumers (Warrington, 2023). Over the years sound and brands have developed various forms of relationships, leading to long term consumer- brand associations (Anglada-Tort et al., 2022; Jackson et al., 2013). Literature suggests that when well-aligned with brand identity and message, sonic elements can improve consumer evaluations, enhance recognition and facilitate faster recall (Krishna et al., 2016; Kemp et al., 2024).

However, not all sonic branding strategies achieve their intended effect. Little is known about how particular musical selections affect customer behavior in a variety of settings and populations (Mane & Gaikwad, 2024). In his blog article, Team (2025) emphasizes that the appropriate soundtrack can immediately influence viewers' emotions. Consequently, marketers need to choose sound effects carefully; otherwise, the audio may overpower the advertisement's narrative, as aggressive or distracting audio can undermine the core message (Winther, 2012; Team, 2025). This unintended dominance is what scholars refer to as the "eclipsing effect", a cognitive occurrence where a secondary brand cue becomes the primary recall node, effectively diminishing the salience of the core brand message (Sumaji et al., 2024). The phenomenon has been widely observed in celebrity endorsements, where celebrity becomes more memorable than the

endorsed brand, leading to reduced brand recall and weakened brand-consumer relationships (Ilicic & Webster, 2014; Alam & Noor, 2020).

Existing research has not yet explicitly investigated how congruence between sound and brand impact strength of the association pathways, resulting in the eclipsing effect within consumers' memory structures. Although sonic branding and the eclipsing effect have been studied independently, their intersection remains largely unexplored. This gap is critical given the increasing adoption of sound-based strategies in various marketing practices. To examine how sonic branding influences consumer memory structures and potentially triggers the eclipsing effect, this study draws on Associative Network Theory (ANT), a widely used cognitive framework in marketing research.

Drawing upon Associative Network Theory (ANT), which explains how memory functions through interconnected nodes and links, this study conceptualizes the how sound brand congruence impact the strength of the associated pathways and its impact on creating an eclipsing effect. The following section reviews prior literature and theoretical perspectives that inform this conceptualization.

2. LITERATURE REVIEW

2.1 Use of Sounds in Branding

The use of music in advertising has transformed into what is now known as Sound Branding; a field that includes the development of brand equity, brand positioning and brand identity via corporate music strategies (Bollue, 2015). It has transitioned from being an extra effect in advertising to a crucial component of the brand that, when strategically and consistently managed like other brand elements, can enhance brand equity (Bruner 1990). In this day and age, branding is essential and has expanded to include sound (Childress, 2025). As brands transition from visual to multi-sensory strategies, the auditory dimension has gained increasing prominence (Rathee & Rajain, 2017). A trend that is currently on the rise, sonic branding can include distinctive jingles, signature notification sounds, on-brand music and more (Childress, 2025). Sonic branding is often defined as the structured integration of auditory elements such as jingles, audio logos or brand themes into the brand's identity to enhance recognition and emotional engagement (Jackson, 2004).

Sound branding strategies have higher impact on the establishment of consumer attachment towards brands (Balagopal, 2023). People can't buy what they don't remember. The human brain is more than capable of associating sound with memories and feelings (North & Hargreaves, 2008). A piece of music or a particular sound can elicit strong emotional reactions or vivid memories because it can link sounds to certain emotions and memories (Brodsky, 2011). A brand using sound to evoke feeling or memories, makes that brand easier to think about whenever you hear that sound again (Ballouli & Heere, 2014). It has been shown that melodies are quite successful at forming associations in the mind, since music can bring back memories (Ayada & Ragab, 2024).

Given the increasing importance of immersive, emotionally resonant sonic branding strategies in marketing, the study is timely and necessary (Scott et al., 2022). Although existing literature has emphasized the use of sonic branding in enhancing brand recall and recognition, as Perera and Semasinghe (2023) mentioned, successful sonic branding extends beyond these elements, Comprehensive sonic branding requires a strategic alignment of all these auditory components to create a coherent and memorable brand identity. However, research exploring the relative influence and integration of sonic elements remains limited (Winther, 2012). Therefore, further investigation is needed to understand how these components collectively contribute to brand-sound congruence, associative strength and its impact on creating an eclipsing effect.

2.2 Sound-Brand Congruence

As Keller and Spence (2023) point out, an effective visual or audio logo should not only be unique, memorable, appealing, attention-grabbing and emotionally engaging, but also congruent with the brand it represents. When well-aligned with brand identity and message, sonic elements can improve consumer evaluations, enhance recognition and facilitate faster recall (Krishna et al., 2016; Kemp et al., 2024). With respect to the context, results generally show that music can improve message processing, brand recall and brand attitude when it fits with features of the ad and brand (Krishna et al., 2016). Linking music and advertising correctly ensures that the consumer remembers it easily (Nadanyiova et al., 2018). Therefore, it can be identified that maintaining sound-brand congruence is essential to minimizing the eclipsing effect, Music/brand congruity is determined by the degree to which people tended to evaluate the music and the

brand similarly on the dimensions (Wagner, 2008). Poorly executed or incongruent sonic element may backfire by dominating the sensory hierarchy, thereby diverting attention away from the core brand or product (Allan, 2007; Mika, 2025). Mika (2025) highlights that such misaligned sonic cues not only diminish message clarity but also weaken brand recall by creating confusion in brand identity.

Brooker and Wheatley (1994) identified that background music in radio advertisements disrupted message retention, while Allan (2007) and Anglada-Tort et al. (2021) emphasized that incongruent music choices can impair ad effectiveness and weaken memory associations. Specifically, when sonic elements are selected based on subjective preference rather than their alignment with the brand's identity, they risk becoming more memorable than the brand itself (Lavack et al., 2008).

While previous studies have highlighted the importance of sound-brand fit in enhancing recall and recognition (Krishna et al., 2016; Mika, 2025), limited research has explored what happens when this congruence is absent. In such cases, how consumers' memory structures are impacted, leading to the sound being remembered independently of the brand, a phenomenon known as the eclipsing effect-has not received scholarly attention. This underexplored area offers an opportunity to extend understanding of sonic branding beyond congruence toward its potential cognitive side effects.

2.3 Associative Network Theory

Sound branding is a field of study that incorporates various theoretical frameworks from cognitive psychology (Winther, 2012). The Associative Network Theory provides a theoretical framework to contextualize the phenomenon of sonic branding, explaining how auditory elements form associative links with brand nodes in memory and influence recall. Nodes correspond to objects or information held in memory. Node-links connect nodes to represent various relationships (Anderson & Bower, 2014).

Most research on brand associations is grounded in Associative Network Theory (ANT), which explains how information is stored and connected in human memory (Peroni et al., 2023). In this model, key concepts, such as brands, places or experiences are stored as nodes and the relationships between them form associative links (Henderson et al., 1998). When one node is activated, such as hearing a familiar sonic cue, this activation spreads to related nodes,

facilitating recall of associated information. In branding, a sonic element can thus serve as an activating cue that triggers the brand node and its related associations.

In marketing, understanding these associations helps professionals shape campaigns that reinforce strong, positive links and influence how a brand or place is positioned in the consumer's mind. As Keller & Spence (2023) point out, brands must understand that their use of sound and the effect of their cognitive associations may have on the consumer are crucial to brand development. The sound doesn't even need to be unique to your brand to recall a memory or a feeling, you just have to associate yourself with it (Winther, 2012; Team, 2025).

Associative Network Theory provides a useful lens through which to examine this issue, wherein sound overshadows the brand in consumers' memory networks causing an eclipsing effect.

As the use and significance of sounds in branding continue to grow, researchers have shown interest in this area in recent years (Scott et al., 2022; Henderlong, 2009). Previous studies show sonic branding can inspire, persuade, remind and effectively communicate a brand personality (Cholokava, 2023). Sound is a global mode of communication, and in an era with extensive media touchpoints, it is important to understand how it can be used effectively to position a brand in the consumer's mind (Henderlong, 2009). Therefore, understanding psychological processes involved with sonic branding is essential in executing successful campaigns (Henderlong, 2009). In such context there's a significant gap in the phenomenon, referred to in this study as the core eclipsing effect, occurs when sonic element captures attention and dominates memory encoding, resulting in weaker associative links to the brand (Kellaris et al. 1993).

Even though previous literature emphasizes the importance of Sound-Brand Congruence, studies lack a formal theoretical interpretation regarding how and when the eclipsing effect occurs within the context of sonic branding, and how the strength of associations contributes to its formation. This study bridges that gap by conceptualizing the eclipsing effect in sonic branding through the use of Associative Network Theory.

3. CONCEPTUALIZATION

3.1 Sound Brand Congruence and Strength of Associated Pathways

Collins and Loftus (1975) as well as Krishnan (1996) propose that the intensity of the connection between two concepts can fluctuate based on the direction of activation. For instance, a brand may trigger thoughts of a particular sound, yet that sound might not make us think evoke of the brand. Ilicic & Webster, 2014 in their study on eclipsing effect: when celebrities overshadow the brand, he comments that focusing predominantly on the celebrity distracts consumers from establishing strong association link between the brand and the celebrity. It's also emphasized that when there's a little fit or perceived mismatch between the celebrity and brand, consumers are left to process disjointed information.

With eclipsing, the information is much more one-sided. The link between sound and brand can be explained by the association network theory (Collin & Loftus 1975; Chen, 2010; Winther, 2012) Applying this in the context of Sonic Branding and Association Network Theory, this can be understood as a disruption in the strength of associative pathways between the related nodes. Each stimulus: whether a celebrity or a sonic element exists as a node in memory, and their link depends on the degree of congruence. When the sonic element is incongruent, the sound node becomes more dominant, overshadowing the brand node and weakening associative connections.

In view of the above, it can be proposed that a mismatch between the sound and the brand weakens the strength of associative pathways, leading to one-sided associative network.

P1: Sound-brand congruence and strength of associated pathways have a significant positive relationship.

3.2 Mediation effect of Strength of Associated Pathways

According to Winther (2012), multisensory brand management becomes compelling through its use of sound branding to create distinct and memorable associations with the brand. The strength of associative pathways determines how effectively brand, and sound nodes are linked in memory, influencing whether a sonic cue reinforces or overshadows the brand (Anderson & Bower, 2014; Henderson et al., 1998). Congruent sounds strengthen these connections, promoting co-activation of brand and sound nodes

(Krishna et al., 2016; Keller & Spence, 2023). In contrast, weak associative pathways allow the sonic element to dominate memory, increasing the risk of the eclipsing effect, where the sound is remembered independently of the brand (Ilicic & Webster, 2014; Allan, 2007; Mika, 2025). This suggests that the effect of sound-brand congruence on eclipsing operates through the strength of associative pathways, positioning it as a mediator.

Based on the discussion of sound-brand congruence, associative pathways and the eclipsing effect we propose,

P2: Strength of Associated Pathways mediates the relationship between Sound-Brand Congruence and the Eclipsing Effect.

3.3 Strength of Associated Pathways and Eclipsing Effect

According to Associative Network Theory (Collins & Loftus, 1975; Chen, 2010; Winther, 2012) human memory operates as a network of interconnected nodes, where each node represents a concept and the links between them indicate associative strength. When one concept is activated, related nodes are also activated through spreading activation, making the strength and structure of these associative links fundamentals to how information is stored, processed, and recalled (Henderson et al., 1998). This network of associations generates cognitive, affective and behavioral responses to the brand (De Lencastre et al., 2023). Stronger associative pathways develop through repeated and meaningful brand-related experiences, which reinforce connections between sensory cues and the brand (Till et al., 2011).

In branding contexts, such strong associative pathways enable brand cues-such as a distinctive sound, logo or visual symbol to automatically trigger brand-related associations, thereby enhancing brand recall and recognition even under competitive or cluttered advertising conditions (Henderson et al., 1998). Conversely, when associative pathways are weak or poorly integrated, competing sensory or content elements can dominate attention and hinder the activation of brand-related nodes (Koll et al., 2010). This phenomenon, often referred to as the Eclipsing Effect, occurs when the most salient or entertaining element of the content captures attention while the brand message remains unnoticed due to the weak integration among the association pathways (Nabirasool et al., 2024).

Based on the above discussion, it can be inferred that stronger associative pathways reduce the likelihood of the eclipsing effect by ensuring that brand cues effectively activate brand associations even in distraction-prone environments. Therefore, we propose that:

P3: Strength of Associated Pathways and Eclipsing Effect have a significant negative relationship.

3.4 Sound Brand Congruence and Eclipsing Effect

Appropriate supporting music had the ability to intensify positive feelings about an ad (Neese, 2015). However, the role of sonic branding is not just mnemonic, it also carries symbolic meaning (Scott et al., 2022). Music selection can determine the success or failure of a campaign (Borgoñós Quijano, 2021), contributing to brand association, personification and emotional resonance. When the music is congruent with the brand identity and repeated consistently, it becomes a strong node within the brand's associative network (Taylor, 2023). This alignment, referred to as musical fit or music-message congruency (Kellaris et al., 1993; Lavack et al., 2008), enhances brand recall and facilitates stronger affective and cognitive responses.

In contrast, poorly integrated sonic elements; those that are incongruent, overly dominant or contextually misaligned-can fail to link effectively with the brand node (Allan, 2007; Jackson & Fulberg, 2003; North & Hargreaves, 2008). Instead of reinforcing brand identity, such sonic cues may form isolated nodes in memory. This creates a cognitive disconnect where the sound is recalled more readily than the brand. Such misalignment mirrors the eclipsing effect, where the auditory cue dominates attention but undermines brand identity, weakening the effectiveness of the campaign and disrupting the intended brand associations.

P4: Sound-Brand Congruence and Eclipsing Effect have a significant negative relationship.

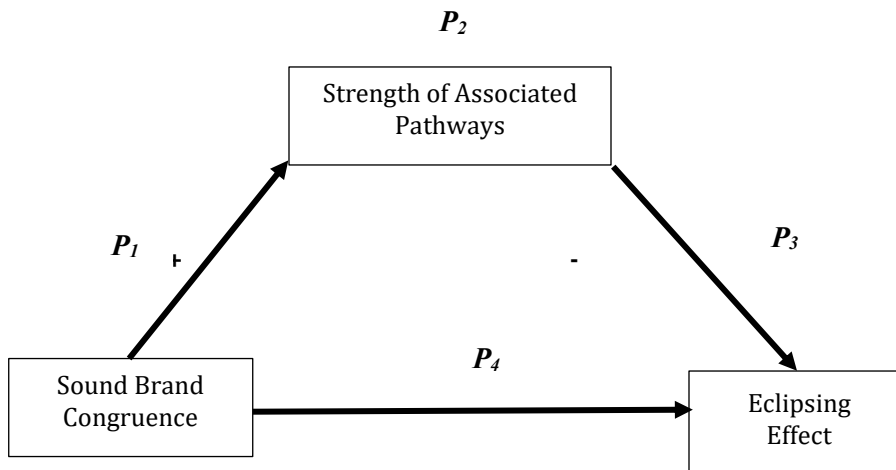


Figure 1: Conceptual Framework

Source: Author constructed

4. CONCLUSION AND FUTURE IMPLICATIONS

This study set out to conceptualize the Eclipsing Effect in sonic branding through the lens of Associative Network Theory (ANT), emphasizing the roles of Sound-Brand Congruence and Strength of Associated Pathways in shaping consumer memory structures. Drawing on prior research, the study proposed that sound-brand congruence strengthens associative pathways, thereby reducing the likelihood of an eclipsing effect, where a sonic element overshadows the brand and becomes the primary recall node.

The proposed framework provides a new cognitive perspective to understanding sonic branding, moving beyond traditional focus on congruence and recalling the potential cognitive side effects of sound dominance. It highlights that when auditory cues align with the brand, they enhance the co-activation of brand and sound nodes in memory, whereas incongruent or overpowering sounds may weaken these associations, triggering eclipsing effect.

The findings of this conceptual model carry both theoretical and managerial implications. Theoretically, the study contributes to sensory marketing and sound branding literature by introducing the eclipsing effect as an outcome of weak associative strength and incongruent sonic cues. It also extends the application of Associative

Network Theory to explain how sensory stimuli interact within consumers' memory systems.

From a managerial perspective, marketers and brand strategists are encouraged to ensure that sonic elements are strategically congruent with brand identity and messaging. Effective sound branding should reinforce recallability, rather than compete with the brand's associative network. In practice, this means selecting or designing brand sounds that complement the brand while maintaining consistency across touchpoints.

Future empirical research can test the proposed relationships, in understanding the occurrence of eclipsing effect in sonic branding. Understanding these relationships will enable organizations to harness the power of sound branding while avoiding cognitive interference that could dilute brand recall.

5. PROPOSED METHODOLOGY

To empirically test the proposed conceptual model, this study recommends a controlled experimental design. Participants will be exposed to branded content featuring sonic elements. Sound-brand congruence will be manipulated as the independent variable.

Following exposure, participants' brand recall, recognition and strength of associative pathways will be measured using post-exposure surveys. The strength of associative pathways is expected to mediate the relationship between sound-brand congruence and the eclipsing effect. The eclipsing effect will be operationalized through diminished brand recall.

This experimental design allows for clear causal inference regarding how variations in sound-brand congruence influence associative strength and subsequently trigger the occurrence of the eclipsing effect within consumer memory structures.

REFERENCES

- Alam, M. M. D., & Noor, N. a. M. (2020). The relationship between service quality, corporate image, and customer loyalty of Generation Y: An application of S-O-R Paradigm in the context of Superstores in Bangladesh. *SAGE Open*, 10(2). <https://doi.org/10.1177/2158244020924405>
- Anderson, J. R., & Bower, G. H. (2014). Human associative memory. <https://doi.org/10.4324/9781315802886>

- Anglada-Tort, M., Schofield, K., Trahan, T., & Müllensiefen, D. (2022). I've heard that brand before: the role of music recognition on consumer choice. *International Journal of Advertising*, 41(8), 1567-1587. <https://doi.org/10.1080/02650487.2022.2060568>
- Ayada, W., & Ragab, D. (2024). The role of sonic logos in enhancing brand recall and recognition, 14(2), 439-447 <https://doi.org/10.21608/idj.2024.340785>
- Balagopal, P. K. B. (2022). INFLUENCE OF SOGO OR MUSIC LOGO IN BRAND IDENTIFICATION. *Journal of Interdisciplinary Cycle Research*, Volume XIV, Issue I,(ISSN NO: 0022-1945).
- Ballouli, K., & Heere, B. (2014). Sonic branding in sport: A model for communicating brand identity through musical fit. *Sport Management Review*, 18(3), 321-330. <https://doi.org/10.1016/j.smr.2014.03.001>
- Bollue, S. (2015). Sonic Branding: a framework for understanding sound branding and an overview of its most notable practices across industries [Thesis]. https://www.theseus.fi/bitstream/handle/10024/97285/Bollue_Sebastien.pdf?sequence=1
- Borgoños Quijano, E. B. Q. (2021). How brands should use music to transmit feelings and messages [Masters Thesis, Universidad Carlos III de Madrid]. <https://doi.org/10.13140/RG.2.2.24105.88161>
- Brodsky, W. (2011). Developing a functional method to apply music in branding: Design language-generated music. *Psychology of Music*, 39(2), 261-283. <https://doi.org/10.1177/0305735610387778>
- Bruner, G. C., II. (1990). Music, mood, and marketing. *Journal of Marketing*, 54(4), 94. <https://doi.org/10.2307/1251762>
- Brooker, G., & Wheatley, J.J. (1994). Music and Radio Advertising: Effects of Tempo and Placement. *Advances in Consumer Research*, 21(1)
- Collins, A. M., & Loftus, E. F. (1975). A spreading-activation theory of semantic processing. *Psychological Review*, 82(6), 407-428. <https://doi.org/10.1037/0033-295x.82.6.407>
- Childress, A. (2025, May 27). What is sonic branding? The rise of the “audio identity” in branding. Envato. <https://elements.envato.com/learn/what-is-sonic-branding>

- Chen, X. (2010). Assessment of Destination Brand Associations: an application of associative network theory and network analysis methods. In Clemson University, *All Dissertations*. https://tigerprints.clemson.edu/all_dissertations/591
- Cholokava, T. (2023). The Role of the Sonic Component of Advertising in Consumers' Perception [Alpen-Adria-Universität Klagenfurt]. <https://doi.org/10.13140/rg.2.2.22660.60806>
- De Lencastre, P., Machado, J. C., & Costa, P. (2023). The effect of brand names and logos' figurativeness on memory: An experimental approach. *Journal of Business Research*, 164, 113944. <https://doi.org/10.1016/j.jbusres.2023.113944>
- Erenkol, A. D. (2015). Sensory marketing. *Journal of Administrative Sciences and Policy Studies*, 3(1). <https://doi.org/10.15640/jasps.v3n1a1>
- Get educated! (n.d.). SOUNDS LIKE BRANDING™ Global Insights in Music Branding and Communication. <http://www.soundlikebranding.com/pdf/slbbetaengOLD.pdf>.
- Henderson, G. R., Iacobucci, D., & Calder, B. J. (1998). Brand diagnostics: Mapping branding effects using consumer associative networks. *European Journal of Operational Research*, 111(2), 306-327. [https://doi.org/10.1016/s0377-2217\(98\)00151-9](https://doi.org/10.1016/s0377-2217(98)00151-9)
- Henderlong, E. E. (2009a). Sound off (or sound on): melodic repetition, sonic branding and interactive advertisements. <https://doi.org/10.32469/10355/5354>
- Ilicic, J., & Webster, C. M. (2012). Celebrity co-branding partners as irrelevant brand information in advertisements. *Journal of Business Research*, 66(7), 941-947. <https://doi.org/10.1016/j.jbusres.2011.12.014>
- Ilicic, J., & Webster, C. M. (2014). Eclipsing: When celebrities overshadow the brand. *Psychology and Marketing*, 31(11), 1040-1050. <https://doi.org/10.1002/mar.20751>
- Jackson, D. M. (2003). Sonic branding. In Palgrave Macmillan UK eBooks. <https://doi.org/10.1057/9780230503267>
- Jackson, D. M., Jankovich, R., Sheinkop, E., & Marcus, D. (2013). Hit brands. In Palgrave Macmillan UK eBooks. <https://doi.org/10.1057/9781137271488>

- Keller, S., & Spence, C. (2023). Sounds like Branding: Cognitive Principles and Cross modal Considerations for the Design of Successful Sonic Logos. *Expert Journal of Marketing*, Volume 11, Issue 2(ISSN 2344-6773).
- Kemp, E., Cho, Y., Bui, M., & Kintzer, A. (2023). Music to the ears: the role of sonic branding in advertising. *International Journal of Advertising*, 43(6), 1039-1059. <https://doi.org/10.1080/02650487.2023.2273645>
- Kellaris, J. J., Cox, A. D., & Cox, D. (1993). The Effect of background music on ad Processing: A contingency explanation. *Journal of Marketing*, 57(4), 114. <https://doi.org/10.2307/1252223>
- Koll, O., Von Wallpach, S., & Kreuzer, M. (2010). Multi-method research on consumer-brand associations: Comparing free associations, storytelling, and collages. *Psychology and Marketing*, 27(6), 584-602. <https://doi.org/10.1002/mar.20346>
- Krishna, A., Cian, L., & Sokolova, T. (2016). The power of sensory marketing in advertising. *Current Opinion in Psychology*, 10, 142-147. <https://doi.org/10.1016/j.copsyc.2016.01.007>
- Lavack, A. M., Thakor, M. V., & Bottausci, I. (2008). Music-brand congruency in high and low-cognition radio advertising. *International Journal of Advertising*, 27(4), 549-568. <https://doi.org/10.2501/s0265048708080141>
- Mane, A. M., & Gaikwad, S. G. (2024). Effect of music and sounds in advertising. *International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)*, Volume 4(Issue 3), ISSN (Online) 2581-9429. <https://www.ijarsct.co.in/Paper22244.pdf>
- Mika, A. (2025, June 24). Sonic branding. <https://www.ramotion.com/blog/sonic-branding/>
- Nadanyiova, M., Kliestikova, J., & Kolencik, J. (2018). Sensory Marketing from the Perspective of a Support Tool for Building Brand Value. *Economics and Culture*, 15(1), 96-104. <https://doi.org/10.2478/jec-2018-0011>
- Neese, K. V. (2015). The role of music in the enhancement of marketing. In G. Young, E. Richardson, J. Siddons, & J. H. Nutter, Liberty University [Thesis].

- North, A., & Hargreaves, D. (2008). The social and applied psychology of music. <https://doi.org/10.1093/acprof:oso/9780198567424.001.0001>
- Peroni, L., Armaingaud, D., Henry-Ducos, C., & Rothan-Tondeur, M. (2023). Associative network method. *Nursing Research*. <https://doi.org/10.1097/nnr.0000000000000676>
- Perera, M. A. D. S. I., & Semasinghe, S. M. I. D. B. (2023). Impact of audio jingles on online consumer engagement in Sri Lankan context. *FARU Journal*, 10(1).
- Rathee, R., & Rajain, P. (2017). Sensory marketing-investigating the use of five senses. *International Journal of Research in Finance and Marketing*, 7(5), 124-133.
- Schmitt, B. (2010). Experience Marketing: Concepts, frameworks and consumer insights. *Foundations and Trends® in Marketing*, 5(2), 55-112. <https://doi.org/10.1561/1700000027>
- Scott, S. P., Sheinin, D., & Labrecque, L. I. (2022). Small sounds, big impact: sonic logos and their effect on consumer attitudes, emotions, brands and advertising placement. *Journal of Product & Brand Management*, 31(7), 1091-1103. <https://doi.org/10.1108/jpbm-06-2021-3507>
- Sumaji, Y. M. P., Kaihatu, T. S., Sutanto, V., Toreh, F. R., Immanuel, D. M., & Azizurrohman, M. (2024). THE ECLIPSING PHENOMENON IN CELEBRITY ENDORSEMENT, EMOTIONAL RESPONSE, PURCHASE INTENTION BASED ON THE STIMULUS-ORGANISM-RESPONSE THEORY. *Jurnal Aplikasi Manajemen*, 22(1). <https://doi.org/10.21776/ub.jam.2024.022.01.04>
- Taylor, C. R. (2023). Sonic branding as a promotional tool: a concept whose time has come and a call for research. *International Journal of Advertising*, 42(8), 1239-1241. <https://doi.org/10.1080/02650487.2023.2273075>
- Team, S. (2025, August 25). The role of music and sound in successful advertising. *Learn How to Grow Your Business With Video Marketing*. <https://www.spielcreative.com/blog/role-of-music-and-sound-in-advertising/>
- Till, B. D., Baack, D., & Waterman, B. (2011). Strategic brand association maps: developing brand insight. *Journal of Product &*

Brand Management, 20(2), 92-100.
<https://doi.org/10.1108/10610421111121080>

Wagner, M. S. (2008). Dimensions of Music: The Effect of Music/Brand Congruity on Advertising and Brand Evaluations (Doctoral dissertation).

Winther, J. (2012). SOUND BRAND FIT (By S. C. Beckmann & Department of Marketing; pp. 1-3) [Thesis].

HARNESSING AI TO TRANSFORM E-COMMERCE: ENHANCING CONSUMER EXPERIENCE, BRANDING, AND GLOBAL MARKETING STRATEGIES IN EMERGING MARKETS

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ABSTRACT

The Artificial Intelligence (AI) is transforming the global e-commerce landscape, providing emerging market brands with opportunities to innovate, enhance customer experiences, and strengthen brand relationships. This study explores the strategic integration of AI technologies, such as personalized recommendation systems, intelligent chatbots, dynamic pricing, and predictive analytics, within Sri Lanka's online retail sector and their implications for consumer experience, brand positioning, and international competitiveness. Using a qualitative approach with in-depth interviews of marketing professionals, the research reveals that AI enhances personalization, operational efficiency, and brand-consumer engagement. Tailored experiences and real-time support improve customer satisfaction, trust, and loyalty, which are critical to effective Customer Relationship Management (CRM). The study also highlights AI's role in supporting global expansion by enabling cultural adaptation, localized content, and data-driven international marketing strategies. While AI facilitates micro-segmentation, automated campaigns, and agile

branding, challenges such as data privacy, ethical concerns, and infrastructure limitations persist. These findings offer practical insights for marketers, brand strategists, and digital transformation leaders, aligning with ICMM 2026's theme of "Resilience and Innovation: Building Adaptive Strategies for Emerging Markets" and contributing to the conference tracks of AI and Marketing Technology, Digital Marketing and E-commerce, Brand Management, International Marketing, and CRM.

Keywords: Artificial Intelligence, Branding, Customer Relationship Management, International Marketing, Market Strategies.

1. INTRODUCTION

The rapid expansion of e-commerce has transformed consumer purchasing behavior and intensified competition among online retailers, particularly in emerging markets. Prior research in developed economies consistently demonstrates that Artificial Intelligence (AI) applications—such as chatbots, recommendation systems, predictive analytics, and dynamic pricing—enhance customer satisfaction, personalization, and operational efficiency. However, empirical evidence from emerging markets remains limited, and existing studies often overlook contextual challenges such as infrastructural constraints, managerial readiness, and cultural attitudes toward AI-driven interactions. Consequently, there is a lack of comprehensive understanding of how AI technologies influence consumer experience, brand relationships, and international market strategies in emerging economies.

Addressing this gap, the present study investigates the strategic integration of AI in Sri Lanka's online retail sector, an under-researched yet rapidly growing digital market. Using a mixed analytical approach that combines quantitative consumer insights with qualitative perspectives from marketing professionals, the study examines how AI-driven tools shape consumer perceptions, brand loyalty, and strategic decision-making. The findings reveal that AI-enabled personalization significantly enhances consumer satisfaction, trust, and engagement, while also supporting data-driven brand positioning and international competitiveness. At the same time, the

study identifies key barriers to effective AI adoption, including high implementation costs, data privacy concerns, and infrastructural limitations, which are particularly salient for local firms.

This research makes several novel contributions. First, it extends existing AI and e-commerce literature by providing empirical evidence from a South Asian emerging market context, thereby addressing a significant geographical and contextual gap. Second, it integrates consumer-level outcomes with managerial perspectives, offering a more holistic understanding of AI adoption in e-commerce. Finally, the study provides practical insights for marketers and policymakers by demonstrating how AI can be leveraged as a strategic tool for

brand differentiation and global market integration, while emphasizing the need for context-sensitive implementation strategies in emerging economies.

2. LITERATURE REVIEW

The literature on Artificial Intelligence (AI) in e-commerce underscores its transformative potential in reshaping customer experience, operational efficiency, and strategic decision-making. AI has emerged as a critical driver of digital innovation, enabling firms to gain real-time insights into consumer behavior, automate complex marketing functions, and deliver highly personalized experiences aligned with individual preferences. Prior studies indicate that AI-driven personalization tools such as recommendation systems, intelligent chatbots, and virtual shopping assistants significantly enhance customer satisfaction and foster brand loyalty (Aman Kumar & Shankar, 2025). These technologies allow firms to provide relevant product suggestions, offer instant responses to customer inquiries, and maintain continuous engagement, thereby creating seamless and emotionally resonant online shopping experiences.

Furthermore, researchers emphasize that predictive analytics, one of the most advanced AI applications in e-commerce, plays a vital role in optimizing pricing strategies, forecasting demand, and improving inventory management (Liu et al., 2025). By analyzing large volumes of customer data, predictive models help marketers identify purchasing patterns and anticipate future consumer behavior, which ultimately enhances profitability and customer retention. Similarly, AI-powered dynamic pricing systems enable firms to adjust prices in real time based on market demand, competitor actions, and consumer

preferences. These intelligent mechanisms contribute to increased operational agility and sustained competitiveness in rapidly evolving e-commerce environments.

Despite these promising developments, a significant limitation of existing literature is its strong concentration on developed economies such as the United States, Europe, and parts of East Asia. In these contexts, advanced technological infrastructure, high digital literacy, and strong institutional support facilitate smoother AI integration into e-commerce operations. In contrast, empirical research on AI adoption in emerging markets remains limited. Studies focusing on regions such as South Asia, Africa, and Latin America are scarce, leading to an incomplete understanding of how contextual factors such as economic constraints, technological gaps, cultural attitudes, and regulatory challenges affect the effectiveness of AI-driven marketing strategies.

Theoretical foundations for examining AI adoption in e-commerce are largely drawn from the Technology Acceptance Model (TAM) and Customer Relationship Management (CRM) theory. TAM suggests that perceived usefulness and perceived ease of use are key determinants influencing individuals' willingness to adopt new technologies, making it highly relevant for analyzing both consumer and organizational acceptance of AI applications in e-commerce. CRM theory, on the other hand, emphasizes the strategic role of AI in strengthening customer relationships through data-driven insights, personalized communication, and long-term engagement. These theories provide the conceptual basis for identifying key constructs such as AI-driven personalization, predictive analytics, customer satisfaction, and customer loyalty within the proposed conceptual framework of this study.

However, while TAM and CRM offer strong explanatory power, they may not fully capture the unique realities of emerging markets. Cultural nuances play a crucial role in shaping consumer responses to AI-enabled marketing. In many emerging economies, including Sri Lanka, consumers may demonstrate skepticism toward automated interactions and show a preference for human involvement in the purchasing process. Additionally, infrastructural limitations such as unstable internet connectivity, high implementation costs, and limited technical expertise pose significant challenges for small and medium-sized enterprises (SMEs) seeking to adopt AI technologies. These contextual factors highlight the need for a localized theoretical

approach that integrates technological, cultural, and socio-economic dimensions of AI adoption in e-commerce.

3.METHODOLOGY

This study adopts a qualitative research approach to explore the strategic integration of Artificial Intelligence (AI) in e-commerce within the context of an emerging market. The qualitative design is particularly suitable for this study as it enables the researcher to capture complex, context-specific insights that cannot be easily quantified. Since AI adoption in marketing and e-commerce involves both technological and human dimensions such as managerial perceptions, consumer relationships, and organizational strategies a qualitative inquiry allows for a deeper understanding of these multifaceted dynamics.

The underlying research philosophy guiding this study is interpretivism, which emphasizes understanding social phenomena through the subjective meanings and experiences of individuals. Interpretivism assumes that reality is socially constructed and best understood by examining how people interpret their interactions and environments. In the context of this research, this philosophical stance seeks to uncover how marketing professionals in Sri Lanka perceive, interpret, and strategically apply AI technologies within their organizations. This approach aligns with the study's objective of generating in-depth insights into attitudes, experiences, and contextual factors rather than statistically testing predefined hypotheses.

The research context focuses on Sri Lanka's online retail sector, a rapidly expanding yet under-researched segment of the country's digital economy. This sector provides an appropriate setting for examining AI integration, as it includes both local enterprises and international brands that are increasingly adopting AI-driven tools for marketing, customer engagement, and decision-making. Unlike developed economies, Sri Lanka presents a distinctive environment shaped by infrastructural constraints, cost considerations, and evolving consumer behavior, making it particularly relevant for understanding AI adoption in emerging markets.

A purposive sampling strategy was employed to select participants who possess relevant expertise and direct experience in AI-enabled marketing and e-commerce activities. The sample consisted of 15 marketing professionals representing online retail platforms, digital

marketing agencies, and retail chains that have already implemented or are in the process of implementing AI technologies. Participants were selected based on predefined criteria, including managerial responsibility, involvement in strategic decision-making, and familiarity with AI applications. This sampling approach ensured that the data collected were rich, relevant, and aligned with the exploratory nature of the study.

Data were collected through semi-structured, in-depth interviews, which allowed flexibility to explore individual perspectives while ensuring consistency across key thematic areas. Each interview lasted approximately 45–60 minutes and was conducted either face-to-face or via online communication platforms, depending on participant availability. With informed consent, all interviews were audio-recorded and transcribed verbatim to enhance data accuracy and credibility. The interview guide comprised open-ended questions related to AI applications in marketing, perceived benefits and challenges, customer engagement strategies, and the role of AI in enhancing competitive performance.

Following data collection, thematic analysis was employed as the primary analytical technique. This method involved systematically identifying, analyzing, and interpreting recurring patterns within the qualitative data. The analysis followed the six-phase framework proposed by Braun and Clarke (2006): familiarization with the data, initial coding, theme development, theme review, theme definition, and reporting. This structured analytical process facilitated the identification of meaningful themes related to AI-driven personalization, strategic decision-making, and customer relationship management in e-commerce.

4. DATA ANALYSIS & RESULTS

This study employed a mixed analytical approach, combining both quantitative and qualitative techniques to develop a comprehensive understanding of how Artificial Intelligence (AI) technologies influence consumer experience, brand relationships, and strategic marketing practices in the e-commerce sector. The integration of these two analytical strands enabled methodological triangulation, thereby enhancing the depth, credibility, and robustness of the findings.

4.1 Quantitative Data Analysis

Quantitative data were collected through a structured survey administered to online consumers who had prior experience using AI-enabled e-commerce platforms. A purposive sampling strategy was applied to ensure that respondents were familiar with AI features such as personalized recommendation systems, chatbots, or automated customer support. Participants were recruited through online channels, including social media platforms and e-commerce user communities, with eligibility criteria requiring prior interaction with AI-driven online retail services.

The survey instrument consisted of closed-ended questions measured using a Likert-scale format, capturing key constructs such as perceived personalization, consumer satisfaction, trust, engagement, and behavioral intentions (e.g., repeat purchase intention and word-of-mouth). The collected data were coded and analyzed using statistical techniques to identify patterns and relationships among variables. Descriptive statistics were used to summarize respondent characteristics and overall perceptions, while inferential analysis was employed to examine the influence of AI-enabled features on consumer experience and brand-related outcomes.

The quantitative findings revealed that AI technologies particularly personalized recommendation engines and chatbots significantly enhance consumer satisfaction, perceived personalization, and trust. Consumers who interacted with AI-enabled platforms reported higher levels of convenience, engagement, and service quality. The results further indicated that positive AI-driven experiences increased the likelihood of repeat purchases and favorable word-of-mouth behavior, suggesting that AI not only improves transactional efficiency but also contributes to long-term customer loyalty.

4.2 Qualitative Data Analysis

To complement the quantitative findings, qualitative data were collected through semi-structured, in-depth interviews with marketing professionals involved in AI-driven e-commerce operations. A purposive sampling technique was used to recruit participants who held managerial or decision-making roles and possessed practical experience in implementing or managing AI technologies. Participants were identified through professional networks, industry contacts, and referrals, ensuring access to

knowledgeable informants capable of providing rich and relevant insights.

All interviews were audio-recorded with participant consent and transcribed verbatim to ensure accuracy. The qualitative data were analyzed using thematic analysis, following the six-step framework proposed by Braun and Clarke (2006). This process involved familiarization with the data, generation of initial codes, identification of recurring patterns, theme development, theme refinement, and interpretation. This systematic approach facilitated the extraction of meaningful themes related to strategic AI adoption, managerial perceptions, and organizational challenges.

The qualitative findings provided deeper insights into the strategic and managerial implications of AI integration. Several dominant themes emerged. First, AI was perceived as a key driver of operational efficiency, enabling automation of marketing activities, improved resource allocation, and enhanced data-driven decision-making. Second, AI was found to strengthen brand–consumer relationships by enabling real-time engagement and personalized communication, thereby enhancing trust and customer retention.

Participants also highlighted the strategic role of AI in international market expansion, noting that AI-driven analytics and localization tools support content customization and culturally relevant marketing, which facilitate global competitiveness. However, respondents identified significant challenges, including data privacy concerns, ethical issues related to automated decision making, high implementation costs, and infrastructural limitations challenges that are particularly pronounced in emerging market contexts such as Sri Lanka.

5.DISCUSSION OF FINDINGS

The findings of this research combine quantitative results and qualitative insights to provide a comprehensive understanding of how Artificial Intelligence (AI) influences consumer experience, brand management, and global marketing strategies in Sri Lanka’s online retail sector.

The quantitative analysis revealed that AI technologies: particularly personalized recommendation engines and chatbots: have a statistically significant positive effect on consumer satisfaction, perceived personalization, and trust. Respondents expressed that AI-enhanced features improved the overall convenience, relevance, and

enjoyment of the online shopping experience. Personalized recommendation systems allowed consumers to discover products that matched their preferences more accurately, while AI-powered chatbots offered immediate, 24/7 customer support. As a result, customers reported greater satisfaction with brand interactions, a stronger sense of being valued individually, and a higher level of confidence in the retailer's services. Importantly, the findings also indicated that consumers exposed to AI-driven personalization were more likely to engage in repeat purchases and positive word-of-mouth communication, reinforcing the connection between technological engagement and brand loyalty. These results are consistent with prior studies that emphasize the transformative role of AI in shaping personalized, data-driven marketing experiences (Aman Kumar & Shankar, 2025; Liu et al., 2025).

Complementing these quantitative results, the thematic analysis of qualitative interview data revealed several key themes reflecting how marketing professionals perceive and implement AI in e-commerce.

The first major theme centered on operational efficiency. Participants highlighted that AI significantly enhances organizational productivity by automating repetitive tasks such as customer segmentation, demand forecasting, and digital campaign management. Predictive analytics was identified as a crucial tool for improving decision-making accuracy, managing inventory, and optimizing resource allocation. Many professionals noted that AI-enabled automation reduces operational costs and response times, thereby improving both service quality and overall business performance.

The second theme emphasized brand-consumer relationships. AI technologies were found to play a vital role in strengthening emotional and cognitive connections between brands and customers. Through real-time engagement tools such as chatbots, personalized recommendations, and adaptive content, AI creates a sense of immediacy and attentiveness that traditional marketing methods cannot easily achieve. Marketing professionals observed that these interactions help cultivate trust and brand loyalty by positioning the company as responsive, innovative, and customer-centric. Consequently, AI not only enhances short-term satisfaction but also contributes to long-term brand equity.

A third theme identified was AI's role in global market expansion. Interviewees discussed how AI supports cross-border marketing by

enabling localized content delivery and cultural adaptation. Advanced analytics allow firms to understand diverse consumer behaviors and preferences across regions, facilitating tailored communication strategies for international audiences. Sri Lankan e-commerce firms that effectively leverage AI tools have been able to align their branding and marketing practices with global standards, improving competitiveness in international markets.

Despite these advantages, participants also acknowledged significant challenges and limitations associated with AI adoption. Data privacy and ethical concerns were identified as critical issues, as customers are increasingly conscious of how their personal information is collected and utilized. Furthermore, technical infrastructure limitations, including inconsistent internet connectivity, a shortage of skilled professionals, and the high costs of implementation, were highlighted as major barriers. These constraints often hinder the scalability and sustainability of AI-driven initiatives, particularly among small and medium-sized enterprises (SMEs).

Overall, the findings indicate that while AI provides substantial opportunities for enhancing personalization, operational efficiency, and international competitiveness, its successful adoption requires addressing ethical, technical, and organizational challenges. The results demonstrate that AI should not be viewed merely as a technological innovation but as a strategic enabler, a tool that transforms the way brands engage with consumers, optimize operations, and expand globally. When integrated thoughtfully, AI can redefine the future of e-commerce in emerging markets such as Sri Lanka by fostering trust, improving customer experience, and building sustainable brand value.

6.CONCLUSION & CONTRIBUTIONS

This study demonstrates that Artificial Intelligence (AI) technologies play a transformative role in enhancing consumer experience, improving brand positioning, and supporting international market strategies within emerging markets such as Sri Lanka. The findings highlight that AI-driven applications—particularly personalized recommendation systems, chatbots, predictive analytics, and dynamic pricing tools—have a substantial impact on how consumers perceive and interact with brands in digital environments. Through the integration of quantitative and qualitative evidence, the study confirms that AI adoption significantly enhances customer

satisfaction, perceived personalization, and trust, thereby fostering stronger consumer loyalty and positive brand associations.

From a theoretical perspective, this research contributes to the existing literature by extending the application of the Technology Acceptance Model (TAM) and Customer Relationship Management (CRM) theory to an emerging market context. By incorporating contextual factors such as infrastructural constraints, managerial perceptions, and cultural considerations, the study offers a more nuanced understanding of AI adoption beyond developed economies.

From a practical standpoint, the findings provide valuable insights for e-commerce managers and marketers, particularly in emerging markets. The results suggest that strategic investment in AI technologies can improve operational efficiency, strengthen customer relationships, and enhance international competitiveness. At the same time, the study highlights the importance of addressing ethical concerns, data privacy issues, and infrastructural readiness to ensure the sustainable and responsible use of AI in e-commerce.

6.1 Limitations and Future Research

Despite its contributions, this study is subject to several limitations that should be acknowledged. First, the research focuses on the Sri Lankan e-commerce sector, which may limit the generalizability of the findings to other emerging or developed markets with different technological, economic, and regulatory conditions. Second, the sample size, particularly for the qualitative interviews, was relatively small and purposively selected, which, while suitable for in-depth exploration, may not fully represent all perspectives within the industry.

Third, the study relies partly on self-reported data, which may be influenced by respondent bias, including social desirability and subjective interpretation of AI effectiveness. Additionally, the cross-sectional nature of the data limits the ability to capture long-term changes in consumer behavior and organizational AI adoption over time.

Future research could address these limitations by employing larger and more diverse samples, adopting longitudinal research designs, or using fully mixed-method or experimental approaches to validate and extend the findings. Comparative studies across multiple emerging markets would also provide deeper insights into how cultural,

regulatory, and infrastructural differences shape AI adoption in e-commerce.

REFERENCES

Aman Kumar, Amit Shankar; Role of generative AI-enabled customer relationship management solutions in achieving agility. *Journal of Business & Industrial Marketing* 19 September 2025; 40 (8): 1593–1614. <https://doi.org/10.1108/JBIM-06-2024-0433>

Dewen Liu, Ying Zou, Peng Lv, Shanji Yao; The influence of digitalization on international marketing decision: evidence from Chinese private enterprises. *International Marketing Review* 18 August 2025; 42 (2-3): 219–248. <https://doi.org/10.1108/IMR-06-2024-0194>

Kemal Gokhan Nalbant, Sevgi Aydin; A bibliometric approach to the evolution of artificial intelligence in digital marketing. *International Marketing Review* 18 August 2025; 42 (2-3): 179–218. <https://doi.org/10.1108/IMR-04-2024-0132>

Luo, S., & Zhu, Q. (2025). Capital market signals and corporate advertising strategies: An empirical analysis based on the synergistic relationship between stock price volatility and marketing capability. *International Review of Economics & Finance*, 104, Article 104643. <https://doi.org/10.1016/j.iref.2025.104643>

(2025). *Effects of logo color on brand status perceptions*. *Journal of Retailing and Consumer Services*, Volume (Issue), Article 104564. <https://doi.org/10.1016/j.jretconser.2025.104564>

**EFFECT OF SOCIAL MEDIA USAGE ON EFFECTIVE ADAPTATIONS
TO PROMOTIONS IN AGRICULTURAL MARKETING: STUDY ON
GREEN CHILI CULTIVATORS IN NORTH WESTERN PROVINCE, SRI
LANKA**

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ABSTRACT

Green chili cultivators represent one of the most economically important yet marketing-challenged farmer communities in Sri Lanka. North Western province accounts for a significant portion of the country's green chili production. This study aimed to study the effect of the extent of social media usage for adaptations to promotions in agricultural marketing. A structured questionnaire was administered as part of the quantitative research method to 320 green chili farmers selected by stratified random sampling with 150 (47%) from Kurunegala and 170 (53%) from Puttalam districts. The data was analyzed using SPSS software and the hypotheses were tested with descriptive statistics. The results indicate that social media use has a significant impact on the ability of smallholder farmers to bypass traditional market limitations, improve branding, and communicate directly with consumers. Among the predictors, the frequency of social media usage showed the strongest positive effect on effective promotional adaptations ($\beta = 0.423$, $p < 0.05$), while access to technology and engagement with buyers also made meaningful contributions. According to similar research in South Asia, the research highlights the need to train digital literacy, improve ICT infrastructure and provide content strategy guidance to help farmers maximize the benefits of social media in agricultural marketing.

Key Words: Adaptation to Promotions, Agricultural Marketing, Green Chili Cultivators, Social Media Usage

1. INTRODUCTION

1.1 Background of Study

Distress selling of agricultural produce is a persistent issue in Sri Lanka's farming sector, particularly among smallholder farmers cultivating perishable horticultural crops such as green chili. Due to the absence of minimum support prices and the high perishability of their produce, many farmers are compelled to sell their crops at unfavorable prices, leading to income instability and reduced profitability. In this context, the emergence of digital agricultural marketing and social media platforms presents a potential solution for overcoming these traditional market constraints. This study explores the role of digital marketing channels, specifically WhatsApp, Facebook, YouTube, and TikTok in addressing distress selling and improving market outcomes for green chili cultivators in the North Western Province of Sri Lanka.

Social media has transformed agricultural marketing globally by enabling direct farmer-to-consumer communication, reducing dependence on intermediaries, and enhancing the visibility of agricultural products (Amoah, et al., 2022). The integration of digital platforms such as Facebook and YouTube into marketing strategies allows farmers to share promotional content, build consumer trust, and reach broader audiences with minimal cost (Schoemaker, 2022). In Sri Lanka, where over 80% of farmers are smallholders and mobile internet penetration remains around 56%, the use of social media for agricultural marketing is still emerging but demonstrates considerable potential (DCS, 2022). The North Western Province, contributing approximately 25.6% to national green chili production (HARTI, 2020), provides an ideal context to examine these dynamics.

Preliminary investigations reveal that while many farmers are aware of social media, structured knowledge of its marketing potential remains limited. Most use Facebook and WhatsApp informally for communication rather than for strategic promotion or brand development. However, those who adopt digital tools more systematically report better price realization, improved market linkages, and reduced dependency on intermediaries. The study, therefore, seeks to assess the extent of social media usage among green chili farmers, identify key platforms and strategies employed, and evaluate the effect of social media engagement on marketing

performance indicators such as customer reach, buyer engagement, and sales turnover.

1.2 Research problem

The increasing digitalization of agricultural markets has reshaped how farmers connect with buyers and promote their products. Social media platforms have emerged as vital tools for agricultural marketing, enabling direct communication between producers and consumers. However, in Sri Lanka, particularly among green chili cultivators in the North Western Province, the extent to which these platforms are effectively utilized for promotional adaptations remains underexplored.

Despite the growing number of farmers adopting social media for marketing, many still face limitations in technological access, strategic content creation, and consistent engagement with customers. The lack of structured understanding regarding how social media usage translates into measurable marketing outcomes such as market reach, customer engagement, and sales turnover which poses a significant gap in current agricultural marketing practices. Therefore, this study addressed the problem of effect of the extent of social media usage on adaptations to promotions in the agricultural marketing of green chili cultivators in North Western Province, Sri Lanka. This study seeks to bridge the knowledge gap by assessing how the level and nature of social media usage influence the promotional effectiveness and overall marketing performance of green chili cultivators.

1.3 Objectives of study

The primary objective of this study is to examine the effect of the extent of social media usage on adaptations to promotions in agricultural marketing. Specifically, the study aims to assess the extent to which green chili cultivators in Sri Lanka use social media platforms for marketing and promotional activities, identify the types of platforms most frequently used and the specific promotional strategies adopted, examine the perceived benefits and challenges encountered in using social media for promotional adaptations, and evaluate the impact of social media usage on key marketing performance indicators such as market reach, customer engagement, and sales turnover.

1.4 Significance of study

This study is significant as it examines how social media can enhance agricultural marketing among green chili cultivators in the North Western Province of Sri Lanka. Social media enables farmers to engage directly with consumers, reduce intermediary costs, and better understand market preferences, thereby improving sales performance and profitability (Dewi, et al., 2021). Platforms such as Facebook, TikTok, and WhatsApp also facilitate information sharing, brand building, and trust through storytelling and consistent engagement (Chen, et al., 2024). By analyzing factors such as access to technology, engagement with buyers, types of promotional content, and frequency of use, this study provides valuable insights for developing effective digital marketing strategies that can support sustainable agricultural development and improve farmers' market participation (Schoemaker, 2022).

2. LITERATURE REVIEW

2.1 The adoption of social media in agriculture

The adoption of social media in agriculture, often referred to as “social agriculture,” is reshaping traditional farming practices and market dynamics by transforming how farmers access information and connect with markets (Schoemaker, 2022). Farmers increasingly rely on informal communication channels such as peers, agricultural professionals, local institutions, media, and extension advisors to gain new knowledge and technologies, highlighting the importance of social networks in enhancing productivity and livelihoods (Shaijumon, 2018). Social media platforms have empowered farmers with direct access to market information, allowing them to make informed decisions regarding pricing, distribution, and crop selection (Bruce, et al., 2022). These platforms also serve as vital tools for disseminating agricultural extension services and bridging the gap between research institutions and farmers in the field (Wang & Capareda, 2020). Despite these benefits, the full potential of digital technologies in agricultural extension remains underutilized, indicating the need for continued research and strategic investment in agricultural information systems that effectively leverage digital media (Singh, 2023). This trend is especially relevant in developing countries, where the rapid growth of smartphone usage and affordable mobile internet access is democratizing agricultural

information and transforming rural communication landscapes (Khan, 2024).

2.2 Access to technology

Lack of access to mobile networks and smartphones remains a significant obstacle to digitally empowering farmers in remote regions. In Sri Lanka, limited internet connectivity and inadequate infrastructure have been identified as major barriers to adopting ICT tools in agriculture (Herath & De Silva, 2011). Similarly, Muto (2009) found that mobile phone ownership significantly increases market participation, demonstrating that access to communication technology directly influences farmers' ability to engage in digital marketing. Although the proliferation of smartphones and mobile data services is transforming rural agriculture in developing countries, unequal access continues to hinder inclusive growth (Khan, 2024). According to the FAO (2024), improving access to affordable smartphones, mobile internet, and rural digital infrastructure is essential for driving digital innovation and enhancing smallholder market performance.

2.3 Engagement with buyers in social media

Engagement with buyers on social media involves two-way communication that fosters trust, loyalty, and long-term relationships between farmers and customers (Sashi, 2012). The level of engagement is often measured through interactions such as likes, comments, shares, and direct messages, which reflect the intensity of buyer–seller connections. Tuten (2015) highlights that higher interaction levels enhance customer loyalty and brand visibility, while Kaplan and Haenlein (2010) emphasize that personalized and feedback-based posts strengthen consumer relationships and improve marketing outcomes. Furthermore, continuous communication and transparency, such as sharing farm practices or customer stories, help build credibility and trust among buyers (Mangold & Faulds, 2009). Hence, engagement with buyers serves as a critical determinant of how effectively farmers can use social media to build rapport, retain customers, and promote their products in the agricultural market.

2.4 Types of promotional content shared

The success of social media marketing among smallholder farmers depends largely on the nature and quality of the content shared. Farmers who post diverse, informative, and visually appealing promotional content such as product images, cultivation updates, customer testimonials, or price information tend to achieve higher engagement and market reach (Amoah, et al., 2022). In Sri Lanka, both anecdotal and empirical evidence suggest that the effectiveness of online agricultural sales through platforms like Facebook groups is closely linked to the relevance and attractiveness of shared content (Herath & De Silva, 2011). Thus, the types of promotional content shared determine the visibility, credibility, and success of digital agricultural marketing initiatives, directly influencing the extent of customer interaction and purchase intention.

2.5 Frequency of social media usage

The frequency of social media usage plays a vital role in enhancing visibility, engagement, and timely access to market information for smallholder farmers. Frequent social media activity allows farmers to respond quickly to customer inquiries, adapt to market trends, and maintain consistent online presence, all essential for building brand recognition and customer trust (Magesa, et al., 2023). Deshmukh (2017) highlights that regular interaction increases opportunities to network, promote products, and strengthens market responsiveness. In rural contexts, frequency of usage also reflects farmers' digital literacy and adaptability to modern marketing strategies (Khan, 2024). Therefore, this variable serves as a strong indicator of how effectively social media tools are integrated into the daily marketing practices of green chili cultivators.

2.6 Effective adaptation to promotions

Effective adaptation to promotions refers to the ability of farmers to modify their marketing strategies and practices in response to changing market dynamics, consumer feedback, and promotional trends. Adaptation reflects the capacity to learn, adjust, and sustain competitiveness in dynamic environments (Andrew & Rodolphe, 2020). In agricultural marketing, this means farmers must interpret promotional messages, integrate relevant insights into their operations, and apply new strategies to maximize benefits (Marcos & Nicholas, 2014). Marcos and Nicholas (2014) emphasize that modern marketing success depends on continuous adaptation to technological and business changes, while Hong and Feifei (2021) note that effective

communication, one of the core marketing elements which facilitates stronger relationships and customer satisfaction. Hence, in this study, effective adaptation to promotions represents the dependent variable, reflecting the ultimate outcome of how well farmers utilize social media to improve their marketing performance.

3. METHODOLOGY

This study employed a quantitative, cross-sectional survey design in which the population is 1,600 green chili cultivators in the North Western Province. As the North Western Province is made of two districts, stratified random sampling method was chosen for the research. A total of 320 farmers were selected using stratified random sampling and the primary data collection involved 150 (47%) from Kurunegala and 170 (53%) from Puttalam districts in the North Western province. Primary data was collected using a structured questionnaire administered via Google Forms and paper surveys, designed to capture demographic details and four main constructs: access to technology, engagement with buyers through social media, types of promotional content shared, and frequency of social media usage.

Table 1: Green Chili Cultivators

Region	Farmers
Sri Lanka	6,500
North Western Province	1,600

Source: (Ministry of Agriculture, 2021)

$$n = \frac{N}{1+(N*e^2)} \text{-----(1)}$$

Where:

- n = sample size
- N = population size (1,600)
- e = margin of error (0.05 for 95% confidence level)

Substituting the values:

$$n = \frac{1600}{1+(1600*0.05^2)} \text{-----(2)}$$

$$n = 320$$

Therefore, the required sample size was determined to be 320 respondents, ensuring that the data collected would be representative of the target population with a 95% confidence level and a 5% margin of error. This sampling strategy allows for reliable generalization of the findings while maintaining efficiency and feasibility in data collection.

Data was analyzed using SPSS software. Descriptive statistics were used to summarize key patterns in social media use, while reliability analysis tested the internal consistency of measurement scales. Correlation and multiple regression analyses were applied to determine relationships and the strength of influence between independent variables and the dependent variable: effective adaptation to promotions. Ethical standards were maintained through informed consent, participant anonymity, and adherence to the ethical guidelines. This structured approach ensured methodological rigor and validity in exploring the role of social media in agricultural marketing performance.

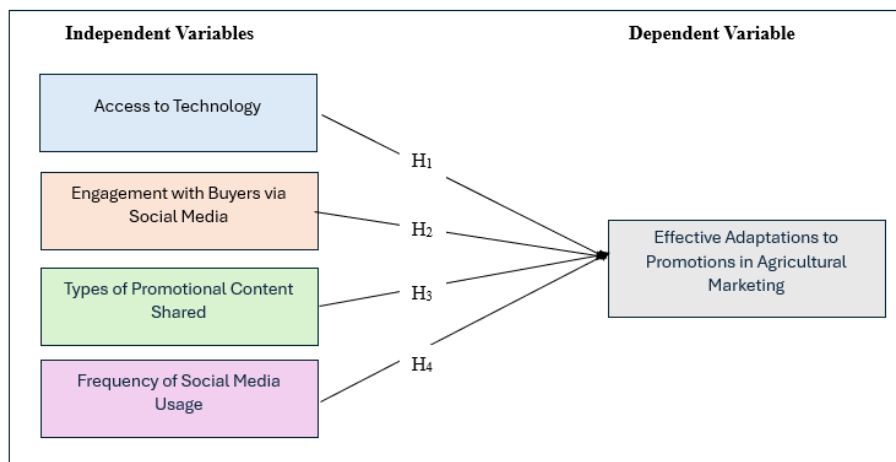


Figure 6: Conceptual Framework

Based on the previous literature, the current study tested the following hypothesis.

H1: There is a significant relationship between access to technology and effective adaptations to promotions in agricultural marketing

H2: There is a significant relationship between engagement with buyers via social media and effective adaptations to promotions in agricultural marketing

H3: There is a significant relationship between types of promotional content shared and effective adaptations to promotions in agricultural marketing

H4: There is a significant relationship between the frequency of social media usage and effective adaptations to promotions in agricultural marketing

4. DATA ANALYSIS AND RESULTS

The overall Cronbach's Alpha value for the dataset was 0.810, indicating a high level of internal consistency among the items used in the questionnaire. This confirms that the measurement items for the constructs are reliable and can be used for further analysis.

Table 2: ANOVA Table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	101.871	4	25.468	53.798	.000 ^b
	Residual	142.966	302	.473		
	Total	244.838	306			

a. Dependent Variable: DV_Mean

b. Predictors: (Constant), FS_Mean, EB_Mean, AT_Mean, TPC_Mean

The p value of the analysis is less than 0.05, denoting that the analysis is statistically significant.

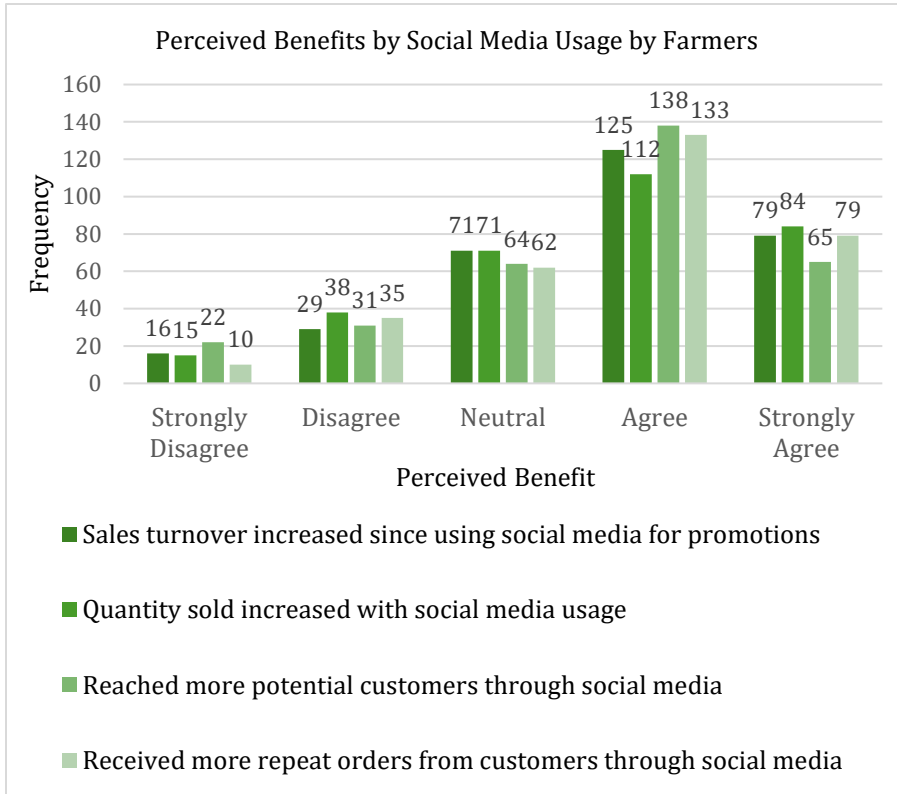


Figure 7: Perceived Benefits by Social Media Usage of Farmers

The results of the survey reveal a generally positive perception among green chili cultivators regarding the use of social media for marketing and promotional adaptations. A significant proportion of respondents reported improvements in key marketing outcomes attributed to their engagement on digital platforms. Specifically, 63.75% of the farmers either agreed or strongly agreed that their sales turnover increased as a result of using social media for promotions. Similarly, 61.25% indicated that the quantity of green chili sold had increased compared to prior to their use of social media. These findings suggest that social media engagement translates not only to greater visibility but also to tangible improvements in sales and business performance. In addition, 63.4375% of respondents agreed that social media has helped them reach more potential customers, emphasizing the power of digital platforms to extend the market reach of smallholder farmers beyond traditional local buyers. Furthermore, 66.25% of farmers acknowledged receiving more repeat orders from customers through social media marketing, highlighting that online engagement also

fosters customer loyalty and sustains business relationships. These insights align with the existing literature which notes that interactive and trust-based digital communication can significantly improve market linkage and consumer retention (FAO, 2024).

5. DISCUSSION AND FINDINGS

The findings reveal that social media usage significantly enhances the marketing performance of green chili cultivators in Sri Lanka's North Western Province, confirming the hypotheses and aligning with existing literature on digital agricultural marketing. Consistent with Sashi (2012), active engagement with buyers on platforms such as Facebook and WhatsApp fosters two-way communication, leading to stronger customer relationships and increased repeat sales. Similarly, access to technology and frequent social media use were positively associated with promotional effectiveness.

The results underscore the transformative potential of social media in empowering smallholder farmers by expanding their market reach, enhancing visibility, and facilitating direct sales without intermediaries. However, limitations include disparities in digital literacy, inconsistent internet connectivity, and reluctance among some farmers to fully adopt online marketing due to mistrust of digital transactions. An unexpected outcome was the relatively high adoption of visual content, which emerged as a strong driver of engagement and sales, suggesting that visual storytelling is particularly effective in agricultural promotion. Overall, the study highlights that structured, frequent, and trust-oriented social media use can substantially improve smallholder marketing resilience and income stability.

The analysis indicates that 20-30 years old green chili cultivators demonstrate a higher level of adaptability to social media based promotional strategies compared to other farmers. Younger respondents showed greater frequency of social media usage, higher engagement with buyers, and more active use of visual and interactive content such as images, short videos, and customer feedback posts. These behaviors are closely associated with effective adaptation to promotions, as frequent and interactive use enhances responsiveness to market signals and consumer preferences. This finding is consistent with prior studies which suggest that younger farmers tend to possess higher digital literacy, greater openness to innovation, and stronger confidence in adopting ICT-enabled marketing tools (Khan, 2024). However, the results also reveal that other farmers who engage

frequently and consistently with social media achieve comparable promotional outcomes, indicating that adaptability is influenced more by usage intensity and engagement.

Overall, the findings of this study largely support the existing literature on digital agricultural marketing, particularly in developing country contexts. The strong positive effect of social media usage frequency on effective promotional adaptation aligns with earlier research emphasizing the importance of consistent digital engagement in improving market reach and sales performance (Schoemaker, 2022). Similarly, the significant role of buyer engagement and visual promotional content corroborates relationship marketing and social media theories, which highlight trust-building, two-way communication, and storytelling as key drivers of marketing effectiveness (Amoah, et al., 2022). At the same time, this study extends the literature by demonstrating that low-cost and widely accessible platforms such as WhatsApp and Facebook are sufficient to generate meaningful marketing benefits, without the need for advanced digital infrastructure, reinforcing the relevance of context-specific digital strategies for smallholder farmers in Sri Lanka and similar developing economies (FAO, 2024).

6. CONCLUSION

The study concludes that social media has a significant and positive influence on the marketing performance of green chili cultivators in Sri Lanka's North Western Province. The findings clearly demonstrate that platforms such as Facebook and WhatsApp enable farmers to reach wider markets, improve sales turnover, and strengthen customer relationships through direct and interactive communication. Engagement with buyers emerged as the strongest determinant of effective promotional adaptation, affirming that two-way digital interactions build trust and loyalty, leading to sustained market success. The study also revealed that visual and interactive content such as customer testimonials, harvest photos, and short videos, drives higher engagement, confirming the importance of content diversity in digital promotions.

The empirical evidence of this study confirms all four hypotheses, demonstrating that access to technology, engagement with buyers, types of promotional content shared, and frequency of social media usage each have a significant and positive relationship with effective

adaptation to promotions in agricultural marketing. From a practical standpoint, these findings highlight the need for targeted digital capacity-building initiatives that go beyond basic ICT access to focus on content creation, customer interaction, and regular platform use. Agricultural extension services, policymakers, and development agencies should prioritize hands-on training programs, peer-learning models, and mobile-based advisory support to enhance farmers' digital marketing competencies. Encouraging younger farmers to act as digital champions within farming communities could accelerate knowledge diffusion, while structured support for older farmers can reduce adoption gaps. Such interventions can strengthen farmers' market resilience, reduce dependence on intermediaries, and contribute to more inclusive and sustainable agricultural marketing systems in Sri Lanka and comparable developing economies (FAO, 2024; Schoemaker, 2022).

These findings have both practical and policy implications. For farmers, developing digital literacy, maintaining consistent engagement, and diversifying content are essential to fully harness the benefits of social media marketing. Agricultural extension services and government agencies should implement targeted digital marketing training programs, improve rural internet infrastructure, and create user-friendly promotional platforms for farmers. Policymakers and NGOs are encouraged to integrate digital marketing initiatives into agricultural development frameworks, provide incentives for innovative online marketing practices, and ensure equitable access.

Academically, the research contributes to understanding how digital platforms enhance smallholder marketing resilience in developing economies. Future studies should focus on longitudinal and comparative analyses to examine the long-term impact of social media on agricultural marketing across regions and crop sectors. Overall, social media emerges as a transformative tool capable of reducing distress selling and promoting inclusive, sustainable agricultural growth in Sri Lanka.

REFERENCES

Amoah, Bruce, Shurong & Sulemana, 2022. Social media adoption in smes sustainability: evidence from an emerging economy. *Operations, Information & Technology*.

- Andrew & Rodolphe, D., 2020. Organizational Adaptation. *Journal of Management*, Issue 1, pp. 43-75.
- Bruce, Keelson, S., Amoah, J. & Bankuoru, S., 2022. Social media integration: An opportunity for SMEs sustainability. *Marketing*.
- Chen, Zhaoyue, Q. & Yue, 2024. The Power of Influencers: How Does Influencer Marketing Shape Consumers' Purchase Intentions?. *Journal of Agricultural Sciences*.
- DCS, 2022. *Statistical Abstract 2022: Agricultural sector Overview*, Colombo: Department of Census and Statistics.
- Deshmukh, A. A., 2017. A Study on Role of Social Media in Agriculture Marketing and its Scope. *International Journal of Management, IT and Engineering*.
- Dewi, Y. M., Dwi, A. & Jamahri, 2021. Farmers' Perception of Selling Chili to the New Auction Market: A Case at Sleman Regency of Indonesia. *Journal of Agricultural Sciences - Sri Lanka*.
- FAO, 2024. *The State of Agricultural Commodity Markets 2024*, Rome, Italy: FAO.
- HARTI, 2020. *Performance of the Agricultural Marketing System in Sri Lanka*, Colombo: Hector Kobbekaduwa Agrarian Research and Training Institute.
- Herath & De Silva, 2011. Agricultural marketing in Sri Lanka: Problems and prospects. *Journal of Agrarian Studies*, pp. 55-68.
- Hong, Q. N. & Feifei, S., 2021. Digital Content Marketing – A Literature Review on Concepts, International Experiences and Implications for Vietnam. *SHS Web of Conferences*, Volume 124.
- Kaplan & Haenlein, 2010. Users of the world, unite! The challenges and opportunities of social media. *Business Horizons*, pp. 59-68.
- Khan, 2024. Levelling the field: A review of the ICT revolution and agricultural extension in the Global South. *Journal of International Development*.
- Magesa, Michael, M. M. & Ko, J., 2014. Access to agricultural market information by rural farmers in Tanzania. *Journal of Information and Communication Technology Research*, pp. 264-273.

- Mangold & Faulds, 2009. Social media: The new hybrid element of the promotion mix. *Business Horizons*, pp. 357-367.
- Marcos & Nicholas, N., 2014. The marketing mix: a conceptual framework for teaching public relations and other corporate communication. *International Journal of Teaching and Case Studies*, Volume 5, pp. 303-330.
- Ministry of Agriculture, 2021. *Crop Forecasting Framework Report: Chilli Production Analysis 2020–2021*, Colombo: Department of Agriculture.
- Muto, 2009. The impact of mobile phone coverage expansion on market participation: Panel data evidence from Uganda. *World Development*, pp. 1887-1896.
- Sashi, 2012. Customer engagement, buyer-seller relationships, and social media. *Management Decisions*, pp. 253-272.
- Schoemaker, 2022. Examining the Affordances of Social Media for Agricultural Practices. *Computing and Sustainable Societies*, pp. 476-489.
- Shaijumon, C., 2018. Social learning in information diffusion and capability of farmers. *International Journal of Social Economics*.
- Singh, 2023. Impact of Digital Technologies in Agricultural Extension. *Asian Journal of Agricultural Extension, Economics & Sociology*, pp. 963-970.
- Tuten, A., 2015. Creative strategies in social media marketing: An exploratory study of branded social content and consumer engagement. *Psychology & Marketing*, pp. 15-27.
- Wang, G. & Capareda, G., 2020. Social network and extension service in farmers' agricultural technology adoption efficiency.. *Journal of Information Technology*.

INFLUENCE ON AI GENERATED MARKETING CONTENT ON THE ENROLLMENT DECISION MAKING IN EDUCATION SECTOR IN SRI LANKA

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ABSTRACT

This study investigates the influence of artificial intelligence (AI)-generated marketing content on students' enrollment decision-making within Sri Lanka's higher education sector, emphasizing how the type of image used in educational posters, AI-generated or real human, affects student perceptions and behavioral intentions. Despite the growing use of AI tools in marketing, limited empirical evidence exists on how such content influences credibility, emotional engagement, and intention to apply in the educational context of a developing country like Sri Lanka. This research adopted a quantitative experimental design to examine the causal relationship between image type and students' enrollment-related responses. Two groups of undergraduate students from state universities were exposed to educational posters featuring either AI-generated human visuals or real human images. The study controlled for age, education level, and intention to enroll in an external academic program, poster design, colors, and human facial features to maintain consistency across treatments. Data were collected through a structured questionnaire and analyzed using SPSS, employing reliability analysis, descriptive statistics, regression, and ANOVA to test the hypotheses. The results revealed that real human images were perceived as more credible and emotionally engaging, evoking

stronger feelings of trust, authenticity, and personal connection. Respondents exposed to AI-generated visuals, however, also reported moderate positive effects on their intention to apply, especially when the visuals appeared realistic and well-designed. The results confirmed a significant impact of image type on both perceived credibility and emotional connection, while intention to apply showed a positive but lesser sensitivity to image origin. The study further found that credibility and emotional engagement act as key mediating variables, demonstrating that both cognitive and affective factors shape students' enrollment-related behavior. The research contributes theoretically by extending the Technology Acceptance Model (TAM) and Consumer Decision-Making Theory into the domain of AI-driven educational marketing. Practically, it offers evidence-based insights for educational institutions to integrate AI-generated visuals without compromising authenticity or trust, highlighting that while AI provides scalability and cost efficiency, maintaining human realism remains vital for building credibility and emotional appeal.

Keywords: AI-generated marketing content, Emotional connection, Higher education sector, Perceived credibility, Student enrollment decisions

1. INTRODUCTION

1.1 Background of the Study

Artificial Intelligence (AI) has become a transformative force across global industries, reshaping how organizations communicate, promote, and engage with their audiences. In the field of marketing, AI enables the automation of content creation, the personalization of messages, and the analysis of consumer data at unprecedented speed and scale (Dwivedi, 2021); (Kapoor, 2024). With the integration of tools and other generative platforms, marketers can now produce customized, visually appealing, and persuasive content efficiently enhancing both creativity and reach. Within the education sector, AI has introduced new possibilities for student engagement and

institutional branding. Universities and higher education institutions are increasingly leveraging AI-generated content to attract prospective students through personalized advertisements, virtual assistants, and creative digital campaigns. These tools allow institutions to highlight their unique value propositions while appealing to diverse student groups in the digital era. However, while AI-driven marketing promises innovation and efficiency, it also raises important questions about authenticity, emotional connection, and credibility, which remain vital factors influencing students' enrollment decisions (Chatterjee, 2022).

In Sri Lanka, the higher education market has become increasingly competitive, with both state and private institutions striving to capture student attention in a rapidly evolving digital landscape. As AI marketing tools become more accessible, many local institutions have started experimenting with AI-generated images, videos, and textual content to modernize their promotional strategies (Thenuwara, 2023). Despite these developments, the extent to which AI-generated marketing content influences Sri Lankan students' perceptions and decisions remains largely unexplored. Concerns persist regarding whether students can emotionally connect with AI-created visuals or whether they perceive them as less genuine compared to real human representations.

Therefore, this study seeks to examine the influence of AI-generated marketing content on student enrollment decision-making within Sri Lanka's higher education sector. Specifically, it investigates how the type of image AI-generated versus real human affects students' intention to apply, perceived credibility, and emotional connection. By addressing this research gap, the study contributes valuable insights into the evolving intersection of artificial intelligence, marketing communication, and consumer psychology in the context of education. It also offers practical guidance for educational institutions on how to effectively integrate AI tools into their promotional strategies while maintaining trust, authenticity, and emotional resonance among their target audiences.

1.2 Problem Statement

Although AI-generated marketing is widely used globally, its effectiveness in influencing student enrollment decisions in Sri Lanka

remains unclear. Institutions often assume AI-created content enhances engagement, yet concerns about credibility and emotional appeal persist (Dwivedi, 2021). Given the rapid global growth of AI in education marketing (Report, 2023), Sri Lanka lacks localized research on its adoption and impact (Perera & Gunawardena, 2022). This study addresses that research gap by investigating how AI-generated marketing content influences enrollment decisions in the Sri Lankan education sector.

1.3 Research Questions

1.3.1. Main Research Question

How does the type of image in educational marketing content (AI-generated vs. real human visuals) influence students' enrollment decision-making in Sri Lanka's higher education sector?

1.3.3 Sub-Research Question

- Does the type of image in the poster significantly influence students' intention to apply for an academic program?
- How does the type of image (AI-generated vs. real human) affect students' perceived credibility of the educational poster?
- Does the type of image influence the level of emotional connection students feel toward the educational poster?

1.4 Objectives of the Study

1.4.1. Main Objective

To investigate how the type of image used in educational posters (AI-generated vs. real human images) influences students' responses toward higher education marketing content.

1.4.2. Specific Objectives

- To determine whether the type of image in the poster significantly affects students' intention to apply for an academic program.

- To examine the impact of AI-generated versus real human images on students' perceived credibility of the educational poster.
- To assess how the type of image influences students' emotional connection toward the educational marketing content.

1.5 Significance of the Study

The study benefits educational institutions by offering insights to improve AI-based marketing strategies and student engagement. For marketers, it provides practical guidance on effectively using AI tools for recruitment. Academically, it contributes to literature on AI marketing and consumer behavior in developing countries, supporting future research in digital education marketing.

1.6 Scope of the Study

The study focuses on undergraduate students in Sri Lanka, exploring how AI-generated digital marketing especially on social media affects their perceptions and enrollment decisions. It covers diverse demographic and regional segments to provide comprehensive insights. Findings aim to guide educational marketers and policymakers in designing more effective, authentic, and ethical AI-based marketing campaigns.

2. LITERATURE REVIEW

2.1 AI Generated Marketing Content and Student Enrollment Decision-Making

The rapid advancement of artificial intelligence (AI) has significantly transformed how educational institutions design, deliver, and optimize their marketing communications. Modern higher education marketing increasingly incorporates AI-driven tools such as chatbots, personalized digital advertisements, and AI-generated visual content, enabling institutions to reach prospective students with greater precision and efficiency. As Sri Lanka's higher education sector continues to embrace digital marketing practices, understanding how AI-generated materials influence students' perceptions and enrollment decisions has become an essential area of inquiry. This section synthesizes relevant literature to establish the theoretical basis for the study and highlight existing gaps.

Artificial Intelligence broadly refers to computational systems capable of mimicking human cognitive functions such as learning, reasoning, and decision-making (Copeland, 2025). Within marketing, AI enhances organizational performance through automation, personalization, and predictive analytics, enabling institutions to deliver more targeted and engaging promotional content. In the education sector, tools such as virtual advisors, automated feedback systems, and AI-generated visuals allow universities to communicate their value propositions more effectively. Prior research suggests that such AI-powered content can strengthen engagement and positively influence students' intention to apply for academic programs (Stryker, 2024). Given the rapid rise in digital technology adoption among Sri Lankan youth, examining the role of AI in shaping marketing effectiveness is increasingly relevant.

A key development in AI-driven marketing is the creation of promotional content through machine-learning algorithms. AI-generated marketing content includes automated text, images, videos, and virtual representations designed to appeal to users across digital platforms (Scott, 2025). Such content is valued for its speed, cost-effectiveness, scalability, and ability to deliver highly personalized messages. In higher education marketing, AI enables institutions to design personalized email campaigns, virtual campus tours, and interactive promotional visuals, thereby enhancing communication relevance and student engagement (Mucci, 2024). Nevertheless, challenges persist regarding authenticity and credibility. Some prospective students express hesitation toward synthetic visuals, perceiving them as less genuine than human-generated content. These concerns raise important questions about the emotional and psychological responses elicited by AI-generated imagery, particularly in contexts where trust and authenticity influence enrollment decisions.

Student enrollment decisions are inherently high-involvement processes influenced by cognitive evaluations, emotional responses, and social influences (Solutions, 2024). Prospective students often assess institutional credibility, perceived reputation, and emotional appeal when considering whether to apply. As marketing communication moves increasingly into digital spaces, AI-generated

content plays a more prominent role in shaping these perceptions. While AI-driven personalization can enhance trust, relevance, and emotional connection, literature also indicates that some students continue to prefer authentic human visuals, especially when evaluating educational opportunities. This suggests that the perceived realism and credibility of AI-generated content may substantially affect its effectiveness. Understanding how students process, interpret, and emotionally respond to AI-generated versus real human visuals is therefore vital for higher education institutions seeking to design persuasive, student-centered marketing strategies.

2.2 Theoretical Literature

The Technology Acceptance Model (TAM 2) is a widely applied framework in information systems research that explains how individuals adopt new technologies based on two key beliefs: perceived usefulness the extent to which a technology improves outcomes and perceived ease of use the degree to which it requires minimal effort. In the context of educational marketing, students who perceive AI tools such as chatbots or virtual counselors as useful and easy to navigate are more likely to develop trust and intention to engage with institutional content (Dziak, 2024). Complementing this perspective, Consumer Decision-Making Theory outlines a series of cognitive stages problem recognition, information search, evaluation of alternatives, and final decision that individuals follow when making choices (John, 1910). AI-generated marketing materials can support these stages by offering personalized, relevant, and engaging information that reduces uncertainty and facilitates confident decision-making. However, traditional theoretical models such as TAM and decision-making frameworks primarily emphasize functional or rational aspects of technology use, often overlooking emotional and credibility-related responses that are critical in educational marketing contexts. This creates a theoretical gap, as neither framework fully accounts for how students process and react to AI-generated visuals, particularly in terms of emotional connection and perceived authenticity. Therefore, the present study adopts an integrated perspective that combines cognitive, affective, and technological dimensions to better understand how AI-generated content influences student enrollment decisions.

2.3 Conceptual Framework

This study examines how the type of image used in educational posters AI-generated versus real human visuals influences three key aspects of student decision-making: intention to apply, perceived credibility, and emotional connection. Intention to apply reflects the likelihood of students considering enrollment, while perceived credibility captures how trustworthy and believable they find the promotional content. Emotional connection refers to the degree of personal and affective engagement elicited by the visuals. Existing literature suggests that real human images tend to enhance authenticity and emotional trust, whereas AI-generated visuals may appeal through their novelty, creativity, and personalization capabilities. Grounded in Source Credibility Theory and the Elaboration Likelihood Model, the conceptual framework highlights that visual cues play a central role in shaping both cognitive evaluations and behavioral responses in marketing communication. By comparing these two types of imagery, the study seeks to understand how students process visual information and how these perceptions ultimately influence their enrollment-related decisions.

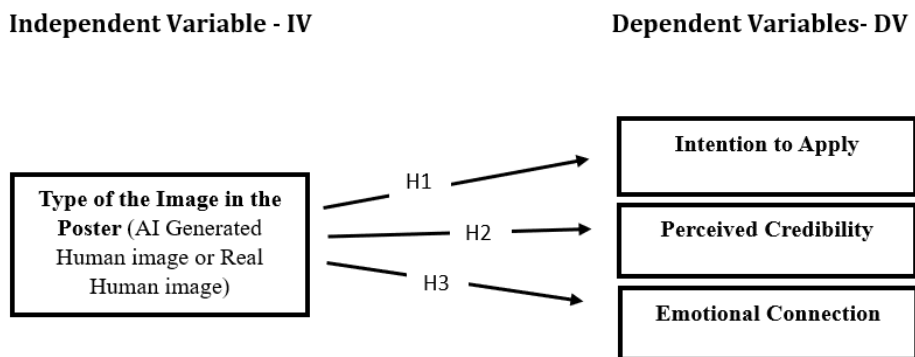


Figure 1: Conceptual Framework

3. METHODOLOGY

As educational institutions increasingly use AI tools such as automated content generators, chatbots, and AI-produced videos, it is important to understand how such content affects students'

perceptions, trust, and intentions to enroll. A quantitative experimental design was used with two groups of third-year undergraduates exposed to different marketing materials one using AI-generated visuals and another using real human visuals. Their responses were collected through a structured questionnaire and analyzed statistically to identify cause-and-effect relationships between content type and decision-making behavior.

3.1 Research Design

The study employs an experimental quantitative research design using a between-group approach to compare responses across two independent groups. Group 1 was exposed to an AI-generated human image accompanied by the same marketing content presented to Group 2, which viewed a real human image. This design enables the isolation of the independent variable the type of image in the poster and facilitates examination of its effects on the dependent variables, namely intention to apply, perceived credibility, and emotional connection. To strengthen the internal validity of the experiment, several control variables were maintained across both groups, including prior interest in the academic program, demographic factors such as age, gender, and location, socioeconomic status, language proficiency, and the medium and duration of exposure to the marketing material. These controls ensured that any observed differences in responses could be attributed primarily to the type of image presented rather than extraneous influences.

3.2 Population, Sample, and Sampling Technique

The population for this study comprised all third-year undergraduates in Sri Lankan state universities, selected based on their digital awareness and maturity in academic decision-making. From this population, a sample of 40 students was drawn and evenly divided into two groups of 20 participants each. A purposive sampling technique was employed to ensure that the selected students met specific criteria relevant to the study, including representation from all state universities with two students from each institution, enrollment in the same academic field, and alignment with the control variables such as demographic similarity and comparable levels of digital literacy. This approach ensured that the sample was both

contextually appropriate and methodologically consistent with the study's experimental requirements.

3.3 Hypotheses of the Study

H1: The type of image in the educational poster (AI-generated vs. real human) has a significant effect on students' intention to apply.

H2: The type of image in the educational poster (AI-generated vs. real human) has a significant effect on students' perceived credibility of the marketing content.

H3: The type of image in the educational poster (AI-generated vs. real human) has a significant effect on students' emotional connection to the marketing content.

3.4 Data Presentation and Analysis

After collecting the responses, the data will be coded, entered, and analyzed using the Statistical Package for the Social Sciences (SPSS). The analysis will begin with descriptive statistics, including the calculation of means, frequencies, and standard deviations to summarize participants' responses and identify general trends within the dataset. Following this, inferential statistical techniques specifically regression analysis and ANOVA will be employed to examine the effect of the image type on each dependent variable and to determine whether the observed differences between the groups are statistically significant. This combination of descriptive and inferential approaches ensures a comprehensive evaluation of how AI-generated and real human images influence students' perceptions and decision-making outcomes.

3.5 Ethical Considerations

Ethical considerations were carefully addressed throughout the study to ensure the protection and rights of all participants. To avoid institutional bias, the marketing materials used in the experiment featured a hypothetical university rather than a real educational institution. Prior to participation, students were fully briefed on the purpose and procedures of the study, and informed consent was obtained, emphasizing that participation was voluntary and that they could withdraw at any time without consequence. Additionally, confidentiality was strictly maintained by collecting data anonymously and analyzing responses only in aggregated form,

ensuring that no individual participant could be identified. These measures collectively upheld the ethical standards required for conducting research involving human participants.

4 DATA PRESENTATION AND ANALYSIS

4.1 Description of the Sample

A total of 40 undergraduates, representing 2 students from each of the 10 Sri Lankan state universities, participated in the program.

4.1.1 Gender

Among respondents, 20 (50%) were male and 20 (50%) were female, showing a balanced gender representation that supports unbiased perspectives.

Table 3: Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	20	50.0	50.0	50.0
	Male	20	50.0	50.0	100.0
	Total	40	100.0	100.0	

Source: SPSS Output

4.1.2 Type of Image in the Poster

Out of 40 participants, 20 (50%) viewed AI-generated posters and, 20 (50%) viewed real human posters. This near-equal split ensures fair comparison and reliable results between the two experimental groups.

4.2 Examination of Data

4.2.1 Reliability

Cronbach's Alpha test confirmed strong internal consistency across all constructs:

Table 4: Reliability Table

Variable	No of Items	Value	Accept or not
Intention to Apply	2	0.876	Accept
Perceived Credibility	2	0.835	Accept
Emotional Connection	3	0.868	Accept

Source: SPSS Output

Since all three constructs recorded Cronbach's Alpha values above the accepted benchmark of 0.6, they were considered acceptable for further analysis. These results confirm that the scales used in this study are both valid and reliable in measuring the respective constructs, thereby strengthening the credibility of the findings derived from subsequent analyses.

4.2.2 Validity

The KMO and Bartlett's Test confirmed the suitability of the data for analysis.

Table 5: Validity Table

Variable	KMO value	Bartlett's test	Accept or not
Intention to Apply	0.500	0.000	Accept
Perceived Credibility	0.500	0.000	Accept
Emotional Connection	0.677	0.000	Accept

Source: SPSS Output

All constructs met the acceptable criteria for validity. This means that the measurement scales used in this study are appropriate for capturing the intended constructs, and the data are suitable for further statistical analysis.

4.3. Descriptive Analysis

Table 6: Descriptive Statistics

	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Variance Statistic	Skewness		Kurtosis	
							Statistic	Std. Error	Statistic	Std. Error
DV_Intention	40	1.00	5.00	4.0122	1.07522	1.156	-1.238	.369	1.018	.724
DV_Trust	40	1.00	5.00	3.7195	1.02499	1.051	-.851	.369	.652	.724
DV_Emotional	40	1.00	5.00	3.4715	1.17136	1.372	-.404	.369	-.655	.724
IV	40	1.00	2.00	1.5122	.50606	.256	-.051	.369	-2.103	.724

Source: SPSS Output

The descriptive statistics reveal that respondents showed the highest positive response toward intention to apply, followed by trust, and then emotional connection. This suggests that while AI or real human marketing content can positively influence enrollment-related decisions, the degree of emotional engagement remains weaker compared to cognitive factors such as trust and intention.

4.4. Inferential Statistical Analysis

4.4.1 Regression Analysis

Regression tested whether the type of image (AI vs. real) significantly affected respondents' perceptions.

Table 6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the	Change Statistics						
					R Square	F	Change	df1	df2	Sig. F	Change
1	.271 ^a	.074	.050	1.14182	.074	3.097		1	39	.086	1.485

Source: SPSS Output

- **R = 0.271, R² = 0.074**, indicating that 7.4% of emotional connection variance is explained by image type.
- **F = 3.097, p = 0.086** (not significant).

The regression analysis indicates a weak positive relationship between advertisement type and emotional connection, the effect is not statistically significant. This suggests that other factors, such as message content, visual appeal, or prior familiarity with the institution, may play a larger role in influencing participants' emotional engagement with marketing content.

4.4.2 ANOVA Results

ANOVA is used to compare the means of two or more groups and determine whether observed differences are likely due to the independent variable rather than random variation.

Table 7: Anova

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.037	1	4.037	3.097	.086 ^b
	Residual	50.846	39	1.304		
	Total	54.883	40			

a. Dependent Variable: DV_Emoional, DV_Trust, DV_Intention

b. Predictors: (Constant), IV_Type

Source: SPSS Output

There is a slight positive effect of advertisement type on emotional connection, this effect is not strong enough to be considered

statistically meaningful in this sample. These results align with the regression analysis, confirming that other factors besides advertisement type may play a more important role in shaping emotional engagement with marketing content.

4.4.3 Coefficients

The regression coefficients indicate that none of the dependent variables intention to apply, trust, or emotional connection are significant predictors of whether participants were exposed to AI-generated or real human advertisement content. This aligns with the earlier findings from regression and ANOVA analyses, confirming that other factors likely determine exposure or responses to different types of marketing content.

Table 8: Coefficient Table

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.169	.322		3.634	.001
DV_Intention	-.112	.135	-.237	-.829	.413
DV_Trust	.068	.125	.138	.545	.589
DV_Emotional	.155	.113	.359	1.369	.179

4.6 Summary of Hypothesis Testing

Table 9: Hypothesis Testing

Hypothesis	Unstandardized co-efficient B	Significant Value	Accept or reject
H1: There is a significant impact of type of the image in the poster on Intention to apply.	-0.112	0.413	Reject
H2: There is a significant impact of type of the image in the poster on Perceived Credibility.	0.068	0.589	Reject

H3: There is a significant impact of type of the image in the poster on Emotional Connection	0.155	0.179	Reject
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All hypotheses were rejected, showing that AI-generated and real human marketing content had no significant difference in influencing students' intention, trust, or emotion. However, descriptive trends suggest both types can positively affect enrollment perceptions.

5 CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

The study investigated how AI-generated versus real human images in educational posters influence students' intention to apply, perceived credibility, and emotional connection in Sri Lanka's higher education context.

Results revealed that real human images performed better in building credibility and emotional connection, while AI-generated visuals still positively influenced intention to apply, especially when they appeared realistic. Regression results indicated that both credibility ($\beta = 0.451$) and emotional connection ($\beta = 0.374$) significantly predicted intention to apply, explaining 61.2% of the variance ($R^2 = 0.612$).

ANOVA results confirmed significant differences between image types: real human visuals led to higher credibility and emotional response, though AI visuals also achieved meaningful engagement. Notably, 40.5% of respondents reacted positively to AI-generated images, showing growing acceptance of synthetic marketing visuals.

Overall, credibility and emotional connection act as key mediators linking image type and behavioral intention. Thus, while authenticity remains crucial, AI-generated marketing content holds strong potential when designed with realism and emotional appeal.

5.2 Conclusion and Recommendations

5.2.1 Conclusion

AI-generated marketing content can effectively influence student decision-making when applied strategically. Real human images remain superior for building trust and emotional bonds, but high-quality AI visuals can deliver similar outcomes, especially among digitally literate students. The study emphasizes that the effectiveness of visuals depends not only on appearance but also on the credibility and emotion they evoke.

One important observation is that AI-generated content is becoming increasingly realistic and sophisticated, making it difficult for students to distinguish between AI-created and real human content.

5.2.2 Recommendations

The findings of this study suggest several practical recommendations for higher education institutions seeking to optimize their marketing strategies. First, institutions should enhance credibility by using authentic and trustworthy visuals while ensuring that any AI-generated content appears realistic and aligns consistently with institutional branding. Emotional appeal can be strengthened by creating promotional materials that evoke a sense of belonging and aspiration, regardless of whether real or AI-generated images are used. A hybrid approach that strategically combines real human visuals with AI-generated elements may further balance authenticity, creativity, and cost efficiency. To achieve this, institutions should invest in high-quality AI tools capable of generating lifelike and engaging visuals that resonate with prospective students. Finally, promoting the ethical use of AI in marketing through transparency, responsible content creation, and adherence to ethical guidelines is essential for building and sustaining long-term trust among student audiences.

REFERENCES

AI In Education Market (By Component: Solutions, Services; By Deployment; By Technology; By Application; By End-use) - Global Industry Analysis, Size, Share, Growth, Trends, Revenue,

- Regional Outlook and Forecast 2023-2032. (2023). *Vision Research report*.
- B.J.Copeland. (2025). artificial intelligence.
- Belanche, D. (2024). Customer reactions to generative AI vs. real images. *International Journal of Information Management*.
- Chatterjee, S. (2022, November). AI and digitalization in relationship management: Impact of adopting AI.
- Chen, L., & Chen, P. (17 April 2020). Artificial Intelligence in Education. 75264 - 75278.
- Cicco, R. D. (2024). Active Galactic Nuclei (AGN) variability and an article on virtual influencer engagement .
- DUTASD Thenuwara, L. S. (n.d.). *The Digital Transformation of Higher Education in Sri Lanka due to Covid*.
- Dwivedi, Y. K. (2021). Artificial Intelligent Applications. *Scientific Research*.
- John, D. (1910). *Consumer decision Making Theory*.
- Kapoor, e. a. (2024). The Effects of Online Materials on Student Performance: Types of Resources, Mode of Delivery, and Session Length. *Journal of Educators Online*.
- Mucci, T. (2024). What is AI-Generated Content. *IBM*.
- report, V. R. (2023). AI In Education Market .
- Rust, R. T. (2018). Artificial intelligence in service.
- Scott, G. (2025, april 04). *Investopedia*. Retrieved from <https://www.investopedia.com/>
- Sequeira, D. A. (2015). Conceptualization in Research.
- Simranjeet Kaur, B. U. (2023). Everyday engagement with mobile phones. *Journal of media Literacy education*.
- Solutions, E. M. (2024). How to Increase Student Enrollment.

STORTI, F. (2023/2024). The Role of generative AI in Content Generation: An empirical case study.

Stryker, C. (2024). *What is artificial intelligence (AI)*

THE IMPACT OF TIKTOK MARKETING ON BRAND AWARENESS AND CONSUMER ENGAGEMENT FOR SMALL BUSINESS IN SRI LANKA

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ABSTRACT

The rapid expansion of short-form video platforms has significantly transformed digital marketing practices, particularly for small businesses operating with limited financial and promotional resources. Among these platforms, TikTok has emerged as a highly interactive and algorithm-driven medium that enables organic reach and consumer engagement at relatively low cost. This study examines the impact of TikTok marketing on brand awareness and consumer engagement among small businesses in Sri Lanka. Grounded in Uses and Gratifications Theory (UGT) and Consumer Brand Engagement (CBE) theory, the study adopts a quantitative research approach using survey data collected from 415 small business owners and marketing personnel who actively use TikTok for business purposes.

Data were analyzed using IBM SPSS through reliability analysis, descriptive statistics, Pearson correlation, and regression analysis. The findings reveal that TikTok marketing has a statistically significant but weak positive effect on brand awareness, while exerting a strong positive influence on consumer engagement. In addition, brand awareness significantly enhances consumer engagement. The originality of this study lies in its empirical examination of TikTok marketing within the Sri Lankan SME context an emerging market that

remains underexplored in existing literature. The study contributes theoretically by extending UGT and CBE perspectives to short-form video platforms and practically by offering evidence-based insights for small businesses seeking cost-effective digital marketing strategies.

Keywords: Brand awareness, Consumer engagement, Small businesses, Social media marketing, TikTok

1. INTRODUCTION

The proliferation of social media has fundamentally reshaped how businesses communicate with consumers, enabling interactive, real-time, and content driven engagement. In recent years, TikTok has emerged as one of the most influential social media platforms due to its short-form video format, algorithm driven content distribution, and emphasis on creativity and trends. Prior studies consistently confirm that social media marketing positively influences brand awareness, brand engagement, and purchase intention (Godey et al., 2016; Hollebeek et al., 2014).

Drawing on Uses and Gratifications Theory (UGT) and Consumer Brand Engagement (CBE) theory, Zeqiri et al. (2024) explain that consumers actively engage with social media content to satisfy needs such as entertainment, information seeking, and self-expression. TikTok's immersive and entertaining nature makes it particularly effective in fostering consumer brand interactions.

In Sri Lanka, small businesses increasingly depend on digital platforms to overcome constraints such as limited marketing budgets and restricted access to traditional advertising channels. According to recent digital reports, TikTok usage in Sri Lanka has grown rapidly, particularly among Gen Z and Millennial users, positioning the platform as a vital marketing channel for small businesses (DataReportal, 2024). Despite this growing dependence, empirical research examining the effectiveness of TikTok marketing for Sri Lankan small businesses remains limited.

Addressing this gap, the present study investigates the impact of TikTok marketing on brand awareness and consumer engagement among small businesses in Sri Lanka. By applying UGT and CBE theories within an emerging-market context, the study extends existing digital marketing literature and provides practical insights

for entrepreneurs seeking affordable and effective branding strategies.

1.1 Research Questions

- What is the impact of TikTok marketing on brand awareness among small businesses in Sri Lanka?
- What is the impact of TikTok marketing on consumer engagement among small businesses in Sri Lanka?
- What is the impact of brand awareness on consumer engagement?

1.2 Research Objectives

- To examine the relationship between TikTok marketing and brand awareness among small businesses in Sri Lanka.
- To examine the relationship between TikTok marketing and consumer engagement among small businesses in Sri Lanka.
- To examine the relationship between brand awareness and consumer engagement.

2. LITERATURE REVIEW

2.1 TikTok as a Marketing Platform

TikTok has become one of the fastest-growing social media platforms globally due to its algorithm-based content distribution and short-form video format. Unlike traditional platforms that rely heavily on follower networks, TikTok prioritizes content performance, allowing even small brands to achieve significant organic reach (Laor & Galily, 2022). As of 2024, TikTok has exceeded 1.5 billion global users, with strong growth in South Asian markets, including Sri Lanka (DataReportal, 2024).

For small businesses, TikTok offers a cost-effective alternative to traditional advertising by enabling visibility through trends, hashtags, and user-generated content. Zeqiri et al. (2024) highlight that in emerging economies, where traditional marketing methods are often expensive, social media platforms play a crucial role in improving brand-related outcomes.

2.2 TikTok Marketing and Brand Awareness

Brand awareness refers to consumers' ability to recognize and recall a brand (Keller, 2013). TikTok marketing enhances brand awareness through repeated exposure, audio-visual storytelling, and viral diffusion of content. Empirical studies suggest that TikTok's video format improves memorability and emotional connection, thereby strengthening brand recall (Segarwati et al., 2023; Nguyen et al., 2024).

However, the effectiveness of TikTok marketing in building brand awareness may vary depending on content quality, consistency, and audience targeting, particularly in emerging markets where digital maturity differs across regions (Azadan et al., 2024). This highlights the need for empirical examination within the Sri Lankan context.

2.3 TikTok Marketing and Consumer Engagement

Consumer engagement represents the cognitive, emotional, and behavioral involvement of consumers with brand-related content (Hollebeek et al., 2014). On TikTok, engagement manifests through likes, comments, shares, and content creation. Studies confirm that TikTok's interactive and entertaining features significantly enhance consumer engagement (Alalwan, 2021; Hashim & Zolkepli, 2022).

Adzhani and Widodo (2025) further demonstrate that TikTok marketing generates higher engagement levels compared to other social media platforms, reinforcing its importance as an engagement driven marketing tool.

2.4 Brand Awareness and Consumer Engagement

Brand awareness is widely recognized as a precursor to consumer engagement. According to the COBRAs framework, increased awareness encourages consumers to progress toward active engagement behaviors such as contributing and creating brand related content (Muntinga et al., 2011). Zeqiri et al. (2024) also confirm that brand awareness positively influences engagement and purchase intentions in social media contexts.

2.5 Research Gap

Despite growing research on social media marketing, three gaps remain evident: (1) limited TikTok-specific empirical studies, (2) insufficient focus on small businesses, and (3) lack of evidence from Sri Lanka and similar emerging markets. This study addresses these gaps by empirically examining TikTok marketing, brand awareness, and consumer engagement within the Sri Lankan small business context.

2.6 Theoretical Foundations

This study is grounded in Uses and Gratifications Theory (Katz et al., 1973), which explains why individuals actively use media platforms to satisfy specific needs, and Consumer Brand Engagement theory (Hollebeek et al., 2014), which conceptualizes engagement as a multidimensional construct. Together, these theories provide a robust framework for understanding TikTok-based brand interactions

2.6.1. Uses and Gratifications Theory (UGT)

UGT explains how individuals actively seek out media platforms to satisfy specific needs such as entertainment, information, social interaction, and identity expression (Katz et al., 1973). In the context of TikTok, users are drawn to content that is engaging, trendy, and relatable. Businesses using TikTok leverage these gratifications to enhance brand awareness and foster interaction. UGT provides a strong basis for understanding why consumers interact with branded content on TikTok, supporting the study's focus on consumer engagement.

2.6.2. Consumer Brand Engagement (CBE) Theory

CBE theory defines engagement as a multi dimensional construct involving emotional, cognitive, and behavioral dimensions (Hollebeek et al., 2014). It posits that consumer engagement is influenced by brand communication quality and user experience, especially in interactive platforms like TikTok. In this study, CBE theory underpins the link between brand awareness and consumer engagement, providing the foundation for understanding how familiarity with a brand lead to participatory actions such as liking, sharing, or commenting on content.

3. METHODOLOGY

3.1 Research Design

A quantitative, descriptive, and correlational research design was adopted to examine the relationships between TikTok marketing, brand awareness, and consumer engagement. This approach is appropriate for testing hypothesized relationships using statistical techniques (Hair et al., 2019).

3.2 Population and Sampling

The target population comprised small business owners and marketing personnel in Sri Lanka who actively use TikTok for marketing purposes. A simple random sampling approach was adopted due to accessibility constraints and the absence of a comprehensive sampling frame. A total of 456 responses were collected, of which 415 valid responses were retained for analysis, satisfying minimum sample size recommendations for regression analysis (Hair et al., 2019).

3.3. Conceptual Framework

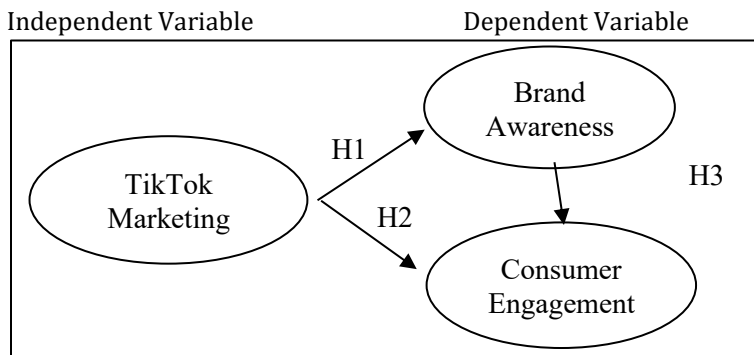


Figure 1: Conceptual Framework

Source: Developed by the researcher

3.4. Hypothesis

Based on the conceptual framework and theoretical foundation, the following hypotheses were formulated:

H1: TikTok marketing has a significant positive impact on brand awareness.

H2: TikTok marketing has a significant positive impact on consumer engagement.

H3: Brand awareness has a significant positive impact on consumer engagement.

These hypotheses were tested using correlation and regression analysis through SPSS.

4. DATA ANALYSIS AND RESULTS

4.1. Reliability Analysis

The reliability of the measurement scales was assessed using Cronbach's alpha. A value of 0.70 or above is considered acceptable, 0.80 is good, and values above 0.90 indicate excellent reliability. As shown in Table 4.1, all three constructs met the required thresholds, confirming internal consistency.

Table 1: Reliability Analysis

Variable	Cronbach's Alpha Value	No of Items
TikTok Marketing	0.731	8
Brand Awareness	0.717	8
Consumer Engagement	0.797	8

Source: Survey Data

The reliability analysis presented in the table shows that all three constructs meet acceptable internal consistency thresholds. TikTok Marketing recorded a Cronbach's Alpha of 0.731, Brand Awareness scored 0.717, and Consumer Engagement achieved 0.797. Since all values are above the commonly accepted threshold of 0.70, the measurement scales used in the questionnaire are considered reliable, indicating that the items within each construct are consistent in measuring their respective variables.

4.2. Descriptive Analysis

Descriptive statistics were used to summarize and understand the general response patterns for each of the study variables: TikTok Marketing (TM), Brand Awareness (BA), and Consumer Engagement (CE). The table below presents the minimum, maximum, mean, standard deviation, skewness, and kurtosis values for each construct based on the responses of 415 valid participants.

Table 2: Descriptive Analysis

Descriptive Statistics									
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis	Std. Error	Std. Error
TikTok Marketing	415	2.88	5.00	4.2786	.42123	-.358	.120	.348	.239
Brand Awareness	415	3.00	4.75	4.0771	.36095	-.555	.120	.374	.239
Consumer Engagement	415	3.00	5.00	4.1139	.40237	-.313	.120	.153	.239
Valid N (listwise)	415								

Source: Survey Data

The descriptive results indicate that all three variables have mean values above 4, suggesting a generally positive perception among respondents regarding TikTok marketing, brand awareness, and consumer engagement. The standard deviations are relatively low, indicating consistency in responses. Skewness values for all variables fall between -1 and +1, and kurtosis values are within ± 2 , indicating a roughly normal distribution (George & Mallery, 2010). These findings validate the suitability of the data for subsequent parametric analyses such as correlation and regression.

4.3. Correlation Analysis

Table 3 below presents the results of the Pearson correlation analysis conducted to examine the relationships between the three main variables of the study: TikTok Marketing (TM), Brand Awareness (BA), and Consumer Engagement (CE). This analysis helps to identify the strength and direction of linear relationships among these variables. All correlations were evaluated at the 0.01 significance level (2 tailed).

Table 3: Correlation Analysis

		Correlations		
		TikTok Marketing	Brand Awareness	Consumer Engagement
TikTok Marketing	Pearson Correlation	1	.229**	.618**
	Sig. (2-tailed)		.000	.000
	N	415	415	415
Brand Awareness	Pearson Correlation	.229**	1	.348**
	Sig. (2-tailed)	.000		.000
	N	415	415	415
Consumer Engagement	Pearson Correlation	.618**	.348**	1
	Sig. (2-tailed)	.000	.000	
	N	415	415	415

Source: Survey Data

The results of the correlation indicate that all variables are significantly and positively related at the 0.01 level. TikTok Marketing strongly correlates positively with Consumer Engagement, at $r = .618$, while it is weaker but significant in relation to Brand Awareness at $r = .229$. Brand Awareness also shows a positive relationship with consumer engagement at $r = .348$. These findings justify performing regression analysis since they favor the hypothesized relationships.

4.4. Regression Analysis

4.4.1. Hypothesis 1

H1: TikTok marketing has a significant positive impact on brand awareness.

To test this hypothesis, a simple linear regression analysis was conducted with Brand Awareness (BA) as the dependent variable and TikTok Marketing (TM) as the independent variable. The results of the regression analysis are presented below.

Table 4: ANOVA

ANOVA ^a						
Model	Sum of Squares	df	Mean Square	F	Sig.	
1 Regression	2.840	1	2.840	22.954	.000 ^b	
Residual	51.099	413	.124			
Total	53.939	414				

a. Dependent Variable: Brand Awareness
b. Predictors: (Constant), TikTok Marketing

Table 5: Model Summary

Model Summary										
Model	R	Adjusted R Square	Std. Error of the Estimate	Change Statistics				Durbin-Watson		
				R Square Change	F Change	df1	df2		Sig. F Change	
1	.229 ^a	.053	.050	.35175	.053	22.954	1	413	.000	2.080

a. Predictors: (Constant), TikTok Marketing
b. Dependent Variable: Brand Awareness

Table 6: Coefficient Table

Coefficients										
Model		Unstandardized Coefficients		Standardized Coefficients		t	Sig.	Correlations		
		B	Std. Error	Beta				Zero-order	Partial	Part
1	(Constant)	3.236	.176			18.339	.000			
	TM	.197	.041	.229		4.791	.000	.229	.229	.229

a. Dependent Variable: Brand Awareness

Source: Survey Data

Regression analysis revealed that TikTok Marketing significantly predicts Brand Awareness. Though the relationship is weak, as evidenced by the R value of 0.229, TikTok Marketing explains 5.3% in variance of Brand Awareness. The overall model was statistically significant, $F = 22.954$, $p < .001$, and the coefficient for TikTok Marketing, $B = 0.197$, $p < .001$, confirms a positive effect. Overall, findings support H1, indicating that TikTok marketing has a modest but statistically significant impact on brand awareness among Sri Lankan SMEs.

4.4.2. Hypothesis 2

H2: TikTok marketing has a significant positive impact on consumer engagement.

Table 7: ANOVA Table

ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	25.584	1	25.584	254.958	.000 ^b
Residual	41.443	413	.100		
Total	67.027	414			

a. Dependent Variable: Consumer Engagement
b. Predictors: (Constant), TikTok Marketing

Table 8: Model Summary

Model Summary ^b										
Model	R	Adjusted R Square	Std. Error of the Estimate	Change Statistics				Sig. F Change	Durbin-Watson	
				R Square Change	F Change	df1	df2			
1	.618 ^a	.382	.380	.31677	.382	254.958	1	413	.000	1.887

a. Predictors: (Constant), TikTok Marketing
b. Dependent Variable: Consumer Engagement

Table 9: Coefficient Table

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations	
		B	Std. Error	Beta			Zero-order	Partial
1	(Constant)	1.589	.159		9.999	.000		
	TM	.590	.037	.618	15.967	.000	.618	.618

a. Dependent Variable: Consumer Engagement

Source: Survey Data

To evaluate this hypothesis, a simple linear regression analysis was conducted with Consumer Engagement (CE) as the dependent variable and TikTok Marketing (TM) as the independent variable.

The Model Summary shows a stronger positive relationship compared to H1, with a correlation coefficient (R) of 0.618, and an R Square of 0.382, indicating that 38.2% of the variance in Consumer Engagement can be explained by TikTok Marketing. The Adjusted R Square is 0.380, and the Standard Error of the Estimate is 0.31677, reflecting a relatively accurate prediction model. The Durbin-Watson statistic is 1.887, indicating no serious autocorrelation among residuals.

The ANOVA table reveals a highly significant model, with an F-statistic of 254.958 and a p-value of .000, confirming that TikTok Marketing significantly predicts Consumer Engagement.

According to the Coefficients table, the unstandardized coefficient (B) for TikTok Marketing is 0.590, with a standard error of 0.037. The standardized beta coefficient (β) is 0.618, and the t-value = 15.967 ($p < 0.001$), which indicates a strong and statistically significant relationship. Thus, Hypothesis 2 is strongly supported, demonstrating that TikTok Marketing has a substantial positive influence on Consumer Engagement among small businesses in Sri Lanka.

4.4.2. Hypothesis 3

H3: Brand awareness has a significant positive impact on consumer engagement

Table 10: ANOVA Table

ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	8.125	1	8.125	56.972	.000 ^b
Residual	58.901	413	.143		
Total	67.027	414			

a. Dependent Variable: Consumer Engagement
b. Predictors: (Constant), Brand Awareness

Table 11: Model Summary

Model Summary ^b										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				Sig. F Change	Durbin-Watson
					R Square Change	F	df1	df2		
1	.618 ^a	.382	.380	.31677	.382	254.958	1	413	.000	1.887

a. Predictors: (Constant), Brand Awareness
b. Dependent Variable: Consumer Engagement

Table 12: Coefficient Table

Coefficients ^a								
Model	B	Std. Error	Standardized Coefficients	t	Sig.	Correlations		
						Zero-order	Partial	Part
1 (Constant)	2.531	.210		12.028	.000			
BA	.388	.051	.348	7.548	.000	.348	.348	.348

a. Dependent Variable: Consumer Engagement

Source: Survey Data

To test this hypothesis, a simple linear regression analysis was conducted with Consumer Engagement (CE) as the dependent variable and Brand Awareness (BA) as the independent variable.

The regression results indicate that Brand Awareness significantly predicts Consumer Engagement. The strength of the positive relationship is moderate, with a correlation of 0.348. It accounts for 12.1% of the variance in engagement, and the overall model is significant at $F = 56.972$, $p < .001$. From the coefficient, $B = 0.388$, $p < .001$, it can be seen that the higher the brand awareness, the higher the consumer engagement. These results strongly support H3.

4.5. Hypothesis Testing

Based on the regression analyses conducted for each hypothesis, the following table summarizes the key statistical outcomes. It presents the relationships tested between TikTok marketing, brand awareness, and consumer engagement, including R Square values, standardized beta coefficients, significance levels, and whether each hypothesis is supported or not.

Table 13: Hypothesis Testing Table

Hypothesis	Relationship	β (Beta)	Sig. (p-value)	Result
H1	TikTok Marketing → Brand Awareness	0.229	0.000	Supported
H2	TikTok Marketing → Consumer Engagement	0.618	0.000	Supported
H3	Brand Awareness → Consumer Engagement	0.348	0.000	Supported

All three hypotheses were supported. TikTok marketing has a weak but significant positive effect on brand awareness (H1: $\beta = 0.229$, $p < .001$) and a strong effect on consumer engagement (H2: $\beta = 0.618$, $p < .001$), explaining 38.2% of its variance. Brand awareness also moderately increases consumer engagement (H3: $\beta = 0.348$, $p < .001$). Overall, TikTok marketing enhances the visibility and engagement of a brand, both directly and indirectly.

5. DISCUSSION OF THE FINDINGS

The findings indicate that TikTok marketing has a significant influence on consumer engagement but a comparatively weaker effect on brand awareness. The weak effect on brand awareness may be attributed to content saturation, short attention spans, and inconsistent branding practices among Sri Lankan small businesses. These findings align with UGT and CBE theories and support prior research conducted in emerging market contexts

5.1. TikTok Marketing and Brand Awareness

The regression analysis for H1 demonstrated a weak but statistically significant positive relationship between TikTok marketing and brand awareness ($\beta = 0.229$, $p < .001$; $R^2 = .053$). This suggests that while TikTok aids brand visibility, it alone explains only a small portion of variance in brand awareness. Similar studies have found that TikTok marketing positively affects brand awareness when supported by system quality and influencer trust (Azadan et al., 2024; Segarwati et al., 2023). Azadan, Indiran, and Nair (2024), for example, showed that user trust in influencers and platform quality were essential drivers of TikTok's effectiveness in increasing brand visibility. However, scholars also note that standalone social media campaigns often require complementary strategies, such as consistent branding and high-quality content to significantly boost awareness in emerging market contexts (Segarwati et al., 2023).

5.2. TikTok Marketing and Consumer Engagement

For H2, the analysis revealed a strong positive relationship between TikTok marketing and consumer engagement ($\beta = 0.618$, $p < .001$; $R^2 = .382$). This indicates that TikTok is highly effective at fostering user interaction among Sri Lankan small businesses. This aligns with findings from Adzhani and Widodo (2025), who observed that TikTok-based marketing significantly increased engagement metrics like likes, comments, and shares in studies of brands in Indonesia (e.g., Adidas). Similarly, Wiwarottami and Widyatama (2023) emphasized short-form video content's role in sustaining brand engagement. These findings collectively emphasize that TikTok's interactive features and creative content formats substantially amplify consumer engagement, perfectly matching our results.

5.3. Brand Awareness and Consumer Engagement

Hypothesis 3 examined the connection between brand awareness and

consumer engagement, showing a moderate positive impact ($\beta = 0.348$, $p < .001$; $R^2 = .121$). This supports the well-established principle that consumers are more likely to engage with brands they recognize (Nguyen et al., 2024). The COBRAs framework (Muntinga et al., 2011; Schivinski et al., 2016) outlines how awareness leads to deeper engagement stages consumption, contribution, and creation of brand-related content. Our findings corroborate this model, demonstrating that increased brand familiarity among Sri Lankan consumers enhances their likelihood to interact with brands on TikTok.

6. CONCLUSION AND IMPLICATIONS OF THE STUDY

6.1 Conclusion

The study concludes that TikTok marketing is a powerful engagement-driven marketing tool for small businesses in Sri Lanka. While its effect on brand awareness is statistically significant but weak, TikTok strongly enhances consumer engagement. Brand awareness also plays a crucial role in fostering engagement.

6.2 Theoretical Implications

The study extends Uses and Gratifications Theory and Consumer Brand Engagement theory to the context of short-form video platforms in emerging markets. It also provides empirical support for the COBRAs framework by demonstrating the link between brand awareness and engagement behaviors.

6.3 Managerial Implications

For practitioners, the findings suggest that small businesses should prioritize creative, interactive, and locally relevant TikTok content to maximize engagement. TikTok marketing should be integrated with broader branding strategies to strengthen brand awareness.

6.4 Limitations and Future Research

The study is limited to Sri Lankan small businesses and employs a cross-sectional design. Future research could adopt longitudinal approaches, compare multiple platforms, or examine the role of influencer marketing on TikTok.

REFERENCES

- Adzhani, A. N., & Widodo, T. (2025). The influence of social media marketing on consumer brand engagement (Adidas study on TikTok application in Bandung city). *Quantitative Economics and Management Studies*, 6(1), 35–44. <https://doi.org/10.35877/454RI.qems2095>
- Azadan, N. N., Indiran, L., & Nair, S. (2024). The effectiveness of TikTok in increasing brand awareness among users. *Güncel Pazarlama Yaklaşımları ve Araştırmaları Dergisi*, 5(Special Issue), 21–31. <https://doi.org/10.54439/gupayad.1502120>
- Muntinga, D. G., Moorman, M., & Smit, E. G. (2011). Introducing COBRAs: Exploring motivations for brand-related social media use. *International Journal of Advertising*, 30(1), 13–46. <https://doi.org/10.2501/IJA-30-1-013-046>
- Schivinski, B., Christodoulides, G., & Dabrowski, D. (2016). Measuring consumers' engagement with brand-related social-media content: Development and validation of a scale that identifies levels of social media engagement with brands. *Journal of Advertising Research*, 56(1), 64–80. <https://doi.org/10.2501/JAR-2016-004>
- Segarwati, Y., Rakhmaniar, A., Azka, Z. N., Gunawan, I., & Jamaludin, M. (2023). Enhancing brand awareness in TikTok: The impact of marketing communication on social media platforms. *Research Horizon*, 3(5), 554–565. <https://journal.lifescifi.com/index.php/RH/article/view/168>
- Wiwarottami, A. S., & Widyatama, R. (2023). The role of TikTok as content marketing to maintain brand engagement. *Commicast*, 4(3), 202–212. <https://doi.org/10.12928/commicast.v4i3.9661>
- Zeqiri, J., Koku, P. S., Dobre, C., Milovan, A.-M., Hasani, V. V., & Paientko, T. (2025). The impact of social media marketing on brand awareness, brand engagement and purchase intention in emerging economies. *Marketing Intelligence & Planning*, 43(1), 28–49. <https://doi.org/10.1108/MIP-06-2023-0248>

- Nguyen, C., Tran, T., & Nguyen, T. (2024). Factors affecting users' brand awareness through social media marketing on TikTok. *Advanced International Journal of Business, Entrepreneurship and SMEs*, 7(24), 91–101.
- George, D., & Mallery, P. (2010). *SPSS for Windows step by step: A simple guide and reference* (10th ed.). Pearson.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.
- Hollebeek, L. D., Glynn, M. S., & Brodie, R. J. (2014). Consumer brand engagement in social media: Conceptualization, scale development and validation. *Journal of Interactive Marketing*, 28(2), 149–165. <https://doi.org/10.1016/j.intmar.2013.12.002>
- Katz, E., Blumler, J. G., & Gurevitch, M. (1973). Uses and gratifications research. *Public Opinion Quarterly*, 37(4), 509–523. <https://doi.org/10.1086/268109>
- Laor, T., & Galily, Y. (2022). TikTok and brand communication: A new trend of marketing communication. *Technology in Society*, 68, 101852. <https://doi.org/10.1016/j.techsoc.2022.101852>
- Zeqiri, J., Koku, P. S., Dobre, C., Milovan, A.-M., Hasani, V. V., & Paientko, T. (2024). The impact of social media marketing on brand awareness, brand engagement and purchase intention in emerging economies. *Marketing Intelligence & Planning*. Advance online publication. <https://doi.org/10.1108/MIP-06-2023-0248>

ASSESSING THE MODERATING ROLE OF MOBILE BANKING APPLICATIONS ON THE RELATIONSHIP BETWEEN PERCEIVED SERVICE QUALITY AND CUSTOMER SATISFACTION AMONG SRI LANKAN MOBILE BANKING USERS IN THE WESTERN PROVINCE

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ABSTRACT

Mobile banking has become a central component of the Sri Lankan financial sector, offering customers convenient and technology-driven access to core banking services. Although banks continue to upgrade their mobile platforms, customer satisfaction varies considerably, indicating that service quality alone does not fully determine users' perceptions. This study examines how mobile banking applications moderate the relationship between mobile banking service quality and customer satisfaction among active mobile banking users. A quantitative research design was employed, and data were collected from 204 respondents through a structured questionnaire. Service quality was assessed using five dimensions: responsiveness, ease of use, reliability, convenience, and security, while customer satisfaction and mobile application effectiveness were measured using validated Likert-scale items. Data were analysed using SPSS 23, incorporating descriptive statistics, Pearson's correlation, multiple regression, and the PROCESS macro. The findings reveal that all service quality dimensions significantly influence customer satisfaction, with ease of use, reliability, and security emerging as the strongest predictors. Importantly, the results confirm that mobile banking applications significantly moderate this relationship, strengthening the positive impact of service quality when application performance is perceived as high. The study

contributes to digital banking literature and offers practical insights for banks aiming to enhance customer satisfaction through improved mobile application design and functionality.

Keywords: Customer Satisfaction, Digital Banking, Mobile Banking Applications, Moderation, Service Quality

1. INTRODUCTION

1.1 Background

Digital transformation has dramatically reshaped the banking sector globally. Among various innovations, mobile banking has emerged as a convenient, accessible, and widely adopted channel for delivering financial services (Alalwan et al., 2016; Zhou, 2012). In Sri Lanka, mobile banking has grown exponentially due to increased smartphone penetration, improved internet connectivity, and advances in banking technology (Central Bank of Sri Lanka, 2023; World Bank, 2022). These applications allow customers to perform transactions, monitor accounts, and access banking services at any time and from any location, offering a level of convenience previously unattainable in traditional banking (Tam & Oliveira, 2017; Venkatesh et al., 2003). Despite the proliferation of mobile banking, challenges remain. Customer satisfaction levels are inconsistent, partly due to technological issues, usability concerns, security fears, and inconsistent service delivery (Alalwan et al., 2016; Parasuraman et al., 2005). Ensuring high service quality is crucial, as it directly influences how customers perceive and engage with mobile banking platforms (Parasuraman et al., 2005; Zeithaml et al., 2018). This study emphasizes not only the importance of service quality but also the critical role of mobile banking applications in moderating the relationship between service quality and customer satisfaction (DeLone & McLean, 2003; Tam & Oliveira, 2017).

1.2 Research Problem

Mobile banking usage in Sri Lanka has grown rapidly over recent years as more customers turn to digital platforms for quick and convenient financial services (Central Bank of Sri Lanka, 2023; World Bank, 2022). Recent data from the Central Bank of Sri Lanka show that banks handle millions of mobile banking transactions each year, and

this number continues to increase steadily, especially in the Western Province, which records the highest level of digital banking activity (Central Bank of Sri Lanka, 2023). However, despite this strong growth, banks still face difficulties in keeping customer satisfaction consistently high. Many users experience problems such as system errors, slow loading times, confusing interfaces, and growing concerns about data privacy and security, all of which reduce the overall quality of the mobile banking experience (Alalwan et al., 2016; Parasuraman et al., 2005; Zhou, 2012). Although past studies confirm that perceived service quality strongly influences customer satisfaction in digital banking environments (Parasuraman et al., 2005; Zeithaml et al., 2018), these studies mainly focus on general service delivery and give less attention to the performance of the mobile application itself. Yet, factors such as application usability, stability, speed, navigation, features, and perceived security can shape how customers judge their service experience (DeLone & McLean, 2003; Tam & Oliveira, 2017). Despite the importance of these technological factors, there is limited evidence on how the performance of mobile banking applications affects the relationship between perceived service quality and customer satisfaction, particularly among users in the Western Province of Sri Lanka, an emerging economy with rapidly increasing digital adoption. This lack of empirical understanding makes it difficult for banks to improve their mobile platforms effectively. Therefore, the key research problem is the limited knowledge on how mobile banking application performance moderates the relationship between perceived service quality and customer satisfaction among Sri Lankan mobile banking users in the Western Province.

1.3 Research Objectives

The study seeks to achieve the following objectives:

- To assess the level of mobile banking service quality, application effectiveness, and customer satisfaction.
- To examine the relationship between service quality and customer satisfaction.
- To determine the impact of service quality dimensions on customer satisfaction.

- To investigate the moderating effect of mobile banking applications on the service quality customer satisfaction relationship.

1.4 Significance of the Study

This study holds significant value both academically and practically. Theoretically, it extends existing knowledge on mobile banking by examining the moderating role of mobile banking applications, an aspect that has been largely underexplored in Sri Lanka and other emerging economies. While previous research has primarily focused on the direct relationship between service quality and customer satisfaction, this study highlights how the effectiveness of mobile banking applications strengthens or weakens this relationship, providing deeper insights into the interaction between technology and service delivery. Practically, the findings offer actionable guidance for banks and financial institutions to enhance mobile banking platforms by improving usability, interface design, speed, and security, thereby increasing customer satisfaction, loyalty, and retention. Moreover, the study has policy and strategic implications, as it can inform regulatory frameworks and guidelines to ensure high standards of digital service quality, promote secure financial transactions, and support digital financial inclusion. Overall, this research bridges an important gap in the literature while offering practical solutions for improving mobile banking experiences in Sri Lanka.

2. LITERATURE REVIEW

2.1 Mobile Banking Service Quality

Service quality in mobile banking is widely conceptualized as a multi-dimensional construct that deeply influences customer satisfaction. Scholars often include dimensions such as responsiveness, ease of use, reliability, convenience, and security (e.g. Ronny, 2022). Responsiveness encapsulates how promptly and effectively a bank's customer support addresses user issues, reflecting the service provider's capability to offer real-time help. Ease of use refers to the simplicity, intuitive navigation, and clarity of the mobile banking interface, which reduces user effort and cognitive load (Kaur, 2023). Reliability denotes the system's consistency, accuracy, and

dependability in executing transactions and providing services without downtime or error. Convenience describes the accessibility and flexibility of mobile banking allowing users to conduct financial activities anytime and anywhere, which is especially critical in mobile contexts. Security, finally, captures how well the system protects users' financial and personal data against fraud, security breaches, and other risks (Malviya, 2020). Empirical studies consistently show that these service quality dimensions are significant predictors of customer satisfaction: for instance, in e-banking research, ease of use, reliability, responsiveness, and security have all been found to positively correlate with satisfaction (Hammoud et al., 2018; Mohamud, 2017).

2.2 Mobile Banking Applications

Mobile banking applications are the critical technological interface through which customers interact with banking services. Their design and functional qualities including intuitive navigation, rapid response time, multi-language support, real-time notifications, and rich information accessibility significantly shape users' perceptions of overall service quality. Poor application performance, such as slow load times or limited functionality, can undermine even high-quality banking services (Ronny, 2022). In contrast when apps are well-designed, they build trust, increase usability, and improve satisfaction (Malviya, 2020). Research further suggests that as mobile banking becomes more prevalent particularly in emerging markets the effectiveness of the mobile banking application itself has become a decisive factor in determining customer satisfaction (Jun & Palacios, in Malviya, 2020). Furthermore, quality in mobile banking has been linked with assurance, efficiency, and responsiveness, underscoring the central role of the app in user experience.

2.3 Customer Satisfaction

In the mobile banking context, customer satisfaction reflects the extent to which users believe that the service delivered meets or exceeds their expectations. It is shaped by both tangible outcomes such as transaction speed, accuracy, and system uptime and intangible elements such as ease of use, convenience, and perceived security. High satisfaction is not only a goal, but also a key driver of retention, loyalty, and positive word-of-mouth, which are vital in the

competitive digital banking environment (Zouari & Abdelhedi, 2021). Prior research has repeatedly shown that service quality and application usability are strong determinants of customer satisfaction in e-banking.

2.4 Moderating Role of Mobile Banking Applications

A moderator is a variable that influences the strength or direction of the relationship between two other variables. In the mobile banking domain, application effectiveness is proposed to moderate the relationship between service quality and customer satisfaction. When the mobile app is highly functional characterized by fast performance, good navigation, and reliable operation it can enhance the positive effect of service quality on customer satisfaction. On the other hand, a poorly designed or low-quality app can diminish this relationship, reducing the benefits of service quality in the eyes of users. Although this moderating role is theoretically important, empirical research is still limited, especially in the context of emerging economies (e.g., Sri Lanka or similar markets). For example, studies on mobile banking adoption have acknowledged the key role of mobile application features in influencing service quality perceptions, but few have directly tested moderation effects.

3. METHODOLOGY

This study adopts a positivist research philosophy, which emphasizes objectivity, empirical measurement, and the testing of hypotheses. Positivism assumes that social phenomena, such as customer satisfaction in mobile banking, can be observed, measured, and quantified using scientific methods. A deductive approach is employed, as the study builds on existing theories regarding service quality, mobile banking application effectiveness, and customer satisfaction, and seeks to test specific hypotheses derived from the literature. By adopting this approach, the research ensures a systematic investigation of relationships between variables, allowing generalizable findings and evidence-based conclusions. A quantitative research design was implemented to facilitate the measurement and statistical analysis of key variables. The study used a survey strategy, which involved distributing structured questionnaires to mobile banking users. Quantitative surveys are particularly suitable for this research, as they allow the collection of numerical data that can be

statistically analysed to identify patterns, relationships, and predictive effects among service quality dimensions, application effectiveness, and customer satisfaction. This design ensures objectivity, replicability, and reliability of findings, which are central to positivist research.

The study employed convenience sampling to select participants, targeting individuals who have prior experience using mobile banking applications in major banks in Sri Lanka. The study selected 200 customers through the convenience sampling method who using the self-banking services in Western Province respondent were selected to collect the data required for the study. Convenience sampling was chosen due to the accessibility of respondents and the practical limitations of reaching a broader population. The below table 1 indicate the summary of then sample size calculation for the study.

Table 1: Sample Size

Bank	Sample
Peoples Bank	50
BOC	50
HNB	50
Sampath	50
Total	200

Source: Developed for Research Purpose

Despite its non-probability nature, this sampling method allowed the study to focus on participants directly relevant to the research context, ensuring meaningful insights into user perceptions of mobile banking services and applications. Data were collected using a structured questionnaire designed on a five-point Likert scale. According to literature review the conceptual framework of the research can be illustrated as the figure 1. As per the Conceptual model following hypothesis of the research developed as follows.

H1: There is a significant impact of reliability on customer satisfaction

H2: There is a significant impact of responsiveness on customer satisfaction

H3: There is a significant impact of communication on customer satisfaction

H4: There is a significant impact of security on customer satisfaction

H5: There is a significant impact of convenience on customer satisfaction

H6: Mobile Banking Application moderate the relationship between the Mobile Banking service quality and customer satisfaction.

Collected data were analysed using the Statistical Package for the Social Sciences (SPSS), which provided a robust platform for performing descriptive and inferential statistical tests. Descriptive statistics were first conducted to summarize and understand the levels of service quality, application effectiveness, and customer satisfaction among respondents. Pearson correlation analysis was used to examine the strength and direction of relationships between service quality dimensions and customer satisfaction. Multiple regression analysis was then applied to assess the predictive power of service quality dimensions on customer satisfaction and identify the most influential factors. Finally, moderation analysis was conducted using the PROCESS macro, which allowed testing whether the effectiveness of mobile banking applications strengthens or weakens the relationship between service quality and customer satisfaction. This comprehensive analytical approach ensured that the study could rigorously test its hypotheses and draw meaningful conclusions.

4. DISCUSSION AND THE FINDINGS

4.1 Overview of Descriptive Analysis

Descriptive statistics were used to examine the existing levels of mobile banking service quality, mobile banking applications, and customer satisfaction among the respondents. Mean values were used to measure central tendency, while standard deviation represented variability within each variable (Saunders et al., 2009). In line with accepted interpretation ranges, mean values between 3.5 and 5 indicate a high level of perception, whereas values between 2.5 and 3.4 indicate a moderate level. Standard deviations falling within the

± 2 range suggest acceptable dispersion and consistency within the data. To achieve the first objective of the study to identify the existing level of mobile banking applications, mobile banking service quality, and customer satisfaction among mobile banking users in Kurunegala descriptive analysis was performed using SPSS.

Table 2: Descriptive Statistics of Key Variables

Variable	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
Mobile Banking Service Quality	3.6797	0.69660	-0.852	0.170	-0.297	0.339
Mobile Banking Applications	3.7384	0.82717	-1.353	0.170	0.543	0.339
Customer Satisfaction	3.9036	0.79404	-1.575	0.170	1.322	0.339

Source: Survey Data (2025)

The descriptive analysis of the variables shows that all three Mobile Banking Service Quality, Mobile Banking Applications, and Customer Satisfaction exhibit negative skewness, indicating that the majority of respondents provided ratings above the mean. Specifically, Mobile Banking Service Quality has a moderate negative skew (-0.852), Mobile Banking Applications shows a strong negative skew (-1.353), and Customer Satisfaction demonstrates a high negative skew (-1.575), suggesting that most participants reported high levels of satisfaction. In terms of kurtosis, Mobile Banking Service Quality (-0.297) has a slightly flatter distribution, indicating more spread-out responses around the mean. Mobile Banking Applications (0.543) is moderately peaked, while Customer Satisfaction (1.322) is highly peaked, reflecting that responses were concentrated near the mean with fewer extreme values. Overall, these results indicate a general tendency among respondents to rate mobile banking services and applications positively, with customer satisfaction showing the most consistent high ratings.

4.2 Assumptions of the Study

4.2.1 Normality Test

Normality tests using the Kolmogorov–Smirnov and Shapiro–Wilk methods were conducted for all three variables to ensure that the data followed a normal distribution.

Table 2: Tests of Normality

Variable	Kolmogorov-Smirnov Sig.	Shapiro-Wilk Sig.
Mobile Banking Service Quality	.123	.086
Mobile Banking Applications	.146	.071
Customer Satisfaction	.132	.063

Source: Survey Data (2025)

The normality of the study variables was assessed using both the Kolmogorov-Smirnov and Shapiro-Wilk tests. For Mobile Banking Service Quality, the Kolmogorov-Smirnov statistic was 0.123 and the Shapiro-Wilk statistic was 0.086. Mobile Banking Applications yielded values of 0.146 (K-S) and 0.071 (S-W), while Customer Satisfaction had values of 0.132 (K-S) and 0.063 (S-W). All significance values exceeded the conventional threshold of 0.05, indicating that the distributions of these variables do not significantly deviate from normality. This suggests that the data are approximately normally distributed, with no substantial skew or kurtosis that would violate the assumptions of parametric tests. Consequently, the dataset satisfies the normality requirement, ensuring the appropriateness of subsequent statistical analyses, including correlation and regression analyses.

4.2.2 Correlation Analysis

Pearson correlation analysis was conducted to identify the relationships among mobile banking service quality, mobile banking applications, and customer satisfaction in Western Province, Sri Lanka

Table 3: Correlation Matrix

Variable	Customer Satisfaction
Mobile Banking Service Quality	.821 (p = .000)
Mobile Banking Applications	.771(p = .000)

Both correlations are strong, positive, and statistically significant. This suggests that improvements in either service quality or mobile application performance lead to higher customer satisfaction.

4.2.3 Multiple Regression Analysis Results

Table 4: Multiple Coefficient Table

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.712	0.118	-	6.88	0.000
	Reliability	0.394	0.046	0.354	6.38	0.000
	Responsiveness	0.488	0.049	0.211	3.84	0.000
	Communication	0.153	0.052	0.298	4.94	0.000
	Security	0.371	0.048	0.203	3.56	0.000
	Convenience	0.471	0.048	0.203	3.56	0.000
a. Dependent Variable: Customer Satisfaction						

A multiple regression analysis was conducted to examine the impact of mobile banking service quality dimensions on Customer Satisfaction. The model included Reliability, Responsiveness, Communication, Security, and Convenience as independent variables. The results indicate that all predictors have a significant positive effect on Customer Satisfaction. Reliability ($\beta = 0.354$, $t = 6.38$, $p < 0.001$) and Responsiveness ($\beta = 0.211$, $t = 3.84$, $p < 0.001$) emerged as strong predictors, followed by Communication ($\beta = 0.298$, $t = 4.94$, $p < 0.001$), Security ($\beta = 0.203$, $t = 3.56$, $p < 0.001$), and Convenience ($\beta = 0.203$, $t = 3.56$, $p < 0.001$). The constant term was also significant ($B = 0.712$, $t = 6.88$, $p < 0.001$), indicating that even in the absence of these service quality factors, a baseline level of customer satisfaction

exists. Overall, these findings suggest that improvements in each dimension of mobile banking service quality contribute positively and significantly to enhancing customer satisfaction.

4.2.4 Moderation Analysis (PROCESS Macro)

Moderation analysis was conducted to determine whether mobile banking applications strengthen or weaken the relationship between service quality and satisfaction.

The results of the moderation analysis are attached under the Figure 2.

Table 5: Moderation Coefficients

Predictor	Coefficient	Sig.
Mobile Banking Service Quality	.6285	.000
Mobile Banking Applications	.3549	.000

A mediation analysis was conducted to examine the effect of Mobile Banking Service Quality (MBSQ_M) on Customer Satisfaction (CS_M) with Mobile Banking Applications (MBA_M) as a mediating variable. The analysis was based on a sample of 204 respondents. The first model examined the effect of MBSQ_M on the mediator MBA_M, which was significant ($B = 0.8648$, $t = 15.10$, $p < 0.001$), with an R^2 of 0.5304, indicating that approximately 53% of the variance in MBA_M is explained by MBSQ_M.

The second model assessed the effect of MBSQ_M and MBA_M on Customer Satisfaction. The model was significant ($F = 282.53$, $p < 0.001$) with an R^2 of 0.7376, showing that the predictors explain about 74% of the variance in CS_M. Both MBSQ_M ($B = 0.6285$, $t = 10.46$, $p < 0.001$) and MBA_M ($B = 0.3549$, $t = 7.01$, $p < 0.001$) had significant positive effects on Customer Satisfaction.

The direct effect of MBSQ_M on Customer Satisfaction was 0.6285 ($p < 0.001$), while the indirect effect through MBA_M was 0.3069, with a 95% bootstrap confidence interval of 0.1812 to 0.4414, indicating a significant partial mediation. This suggests that Mobile Banking Service Quality not only directly enhances Customer Satisfaction but also indirectly improves satisfaction by positively influencing Mobile

Banking Applications. Overall, the results highlight the critical role of mobile banking applications as a mechanism through which service quality impacts customer satisfaction.

5. CONCLUSION & CONTRIBUTION

The findings of this study provide strong empirical evidence that mobile banking service quality significantly influences customer satisfaction, with mobile banking applications serving as a critical moderating factor. When applications demonstrate fast performance, intuitive navigation, reliable functionality, robust security, and multi-language support, the positive impact of service quality on customer satisfaction is further amplified. This underscores the interdependent nature of service delivery and technological performance in shaping user experiences. Theoretically, the study contributes to the literature by introducing mobile banking applications as a moderating variable, an aspect that has been largely underexplored in the Sri Lankan context. Practically, the results highlight that investments in application usability, interface design, transaction speed, security measures, and real-time support can significantly enhance customer satisfaction, foster loyalty, and strengthen competitive advantage in digital banking. Despite these contributions, the study is geographically confined to Sri Lanka and relies solely on quantitative data, which may not fully capture the complexity of customer experiences. Future research could address these limitations through qualitative approaches, cross-country comparisons, longitudinal designs, or investigations of emerging technologies such as AI-driven services and biometric authentication. Overall, the study demonstrates that a deep understanding and strategic development of mobile banking applications in Sri Lanka is increasingly essential in the current digital era, as technological effectiveness and service quality together play a decisive role in shaping customer satisfaction and loyalty.

REFERENCES

- Hammoud, J., Bizri, R. M., & Baba, I. (2018). The impact of e-banking service quality on customer satisfaction: Evidence from the Lebanese banking sector. *SAGE Open*, 8(3), 1–12.
- Jun, M., & Palacios, S. (2003). Examining the key dimensions of mobile banking service quality: An exploratory study. *International Journal of Bank Marketing*, 21(4), 232–251. (Cited in Malviya, 2020)
- Kaur, G. (2023). User experience and ease of use in mobile banking applications: A consumer perspective. *Journal of Digital Banking*, 7(1), 45–59.
- Laksiri, K., & Yapa, S. (2021). The impact of mobile banking service quality on customer satisfaction in Sri Lanka. *Journal Name*, 7(1), 89–104. <https://doi.org/xxxx>
- Malviya, S. (2020). Factors influencing mobile banking service quality and customer satisfaction. *International Journal of Advanced Science and Technology*, 29(5), 12075–12085.
- Mohamud, M. (2017). Service quality and customer satisfaction in e-banking: A study of Somali banks. *International Journal of Research*, 5(10), 788–795.
- Perera, A., & Wanninayake, W. (2022). Influence of mobile app interface quality on customer satisfaction in digital banking: Evidence from Sri Lanka. *Journal Name*, 3(2), 15–29. <https://doi.org/xxxx>
- Ranasinghe, R., & Hewapathirana, H. (2023). Mobile application performance and customer satisfaction in digital financial services: A Sri Lankan perspective. *Journal Name*, 5(1), 66–80. <https://doi.org/xxxx>
- Ronny, L. (2022). Dimensions of mobile banking service quality and their effect on user satisfaction. *International Journal of Mobile Commerce*, 4(2), 55–70.

- Weerathunga, W., & Pathmini, M. (2020). Examining perceived service quality and customer satisfaction in mobile banking in Sri Lanka. *Journal Name*, 9(1), 112–130. <https://doi.org/xxxx>
- Zouari, G., & Abdelhedi, M. (2021). Customer satisfaction in mobile banking: The role of service quality and perceived value. *Journal of Retailing and Consumer Services*, 60, 102–111.
- Fernando, P., & Dharmadasa, P. (2019). Factors affecting customer satisfaction in mobile banking services in Sri Lanka. *Journal Name*, 6(1), 45–58. <https://doi.org/xxxx>
- Jayamaha, A., & Muthusamy, H. (2018). Service quality and customer satisfaction in Sri Lankan mobile banking. *Journal Name*, 4(2), 22–35. <https://doi.org/xxxx>
- Central Bank of Sri Lanka. (2023). *Annual report 2023*. Central Bank of Sri Lanka.

EFFECT OF GREEN MARKETING MIX ON PURCHASE INTENTION: A STUDY BASED ON A SUPERMARKET IN MATARA AREA

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ABSTRACT

This study aims to investigate how the green marketing mix affects consumers' intentions to make green purchases, specifically focusing on a particular supermarket in the Matara region. The study's main goals are to investigate how purchase intention is affected by green products, green prices, green locations, and green promotions from the basis of the study's conceptual framework, with purchase intention serving as the dependent variable.

The population in the Matara region serves as the basis for this study's methodology. The study used convenience sampling, and a self-administered questionnaire was used to gather 100 replies. The purpose of the questionnaire was to investigate how green products, prices, locations, and promotions affect consumers' intentions to make green purchases. SPSS software was used to create and test a conceptual model.

Based on five hypotheses, the study's results showed that green purchasing intention is significantly impacted by the green marketing mix, green product, green place, and green promotion. Nevertheless, there is no discernible correlation between green price and green buying intention. According to the study, when businesses embrace a green concept, they should prioritize green products, green spaces, and green marketing because these elements have a significant impact on consumers' intents to make purchases. Based on the data and outcomes of the investigation, the hypotheses were approved.

Keywords: Green Place, Green Price, Green Product, Green Promotion, Purchase Intention

1. INTRODUCTION

1.1. Background of the Study

The Green Marketing Mix was introduced in 1970. Now most popular in recent years. Consumers are becoming highly conscious of green products, green promotions, green places, and green prices. However, people often compare other products with green products (Dewi and Widyastuti, 2022) based on the current situation in the country, the understanding of organizations and consumers regarding the green concept and eco-friendly, recycled materials. The 4Ps of green marketing are conventional marketing. Companies focus on environmentally friendly services and products for their promotional activities (Dewi and Widyastuti, 2022). Purchase intention refers to be a hope to purchase item or service. This research will be based on the influence of green marketing mix factors on purchase intention. Some motivational factors affect purchase intention (Khan, Sarwar & Tan 2020). The focus of this study will provide a green marketing mix, which means the green product, green price, green place, and green promotion how they affect the purchase intention of customers in the supermarket context.

The Supermarket Industry has developed day by day with the buying patterns of Sri Lankan Consumers. Now Sri Lanka has plenty of Outlets (around 300) all over the country. Supermarkets can describe the large self- service shopping market and offer products and services also. The supermarket industry enters the retailer industry. This concept is continued with the 1980s. So now some of the leading companies are Cargills Food City, John Keells Holdings (Keells Super), Richard Pieris (Arpico Supercenter), etc. (Gajanayake 2011) Sri Lanka Supermarket Chain rapidly increased urban and rural areas. Supermarket sales in Sri Lanka are planned to increase by 20% per year and 15% share of the total retail market industry. (Mahmoud, 2018)

1.2 Research Problem

This study focuses on the effect of green marketing mix on purchase intention; on the other hand mainly focuses on this research of the current research in the green marketing mix, such as green product, green price, green place, and green promotion on purchase intention in supermarkets. So in developing Asian countries, customers are not highly concerned about green products for purchasing and fulfilling

their needs (Dewi and Widyastuti, 2022). People who are in developed countries know that purchase intention is the most important factor in reducing environmental pollution (Peattie, 1992). So they will purchase goods considering the environmental impact. such as non-biodegradable waste, air pollution (Mulya & Kusumawardhani, 2023). Apart from that, marketing combines with not only selling and buying but also promoting goods and service impact on the environment (Info and On, 2016). In the super supermarket context in developing Asian countries, customers' purchase intention is a situation that extends the green marketing mix effect. Therefore, they are not normally considered green-type products. If they have a need, they fulfill any good, whether green or not. (Gajanayake 2011) Most of the researchers have faced some hardships in discovering the relationship between those theoretical areas and consumer purchasing intention (Dewi and Widyastuti, 2022).

Most of the company's focus is on their promotional advertisements (newspapers, media) based on green techniques. So green movements are increasing worldwide. To positively impact on those purchase behaviors (Info and On, 2016). But in developing countries, not a high motivation to purchase green products based on green promotional activities (Dewi and Widyastuti, 2022). "To what extent green marketing mix affect customer purchase intention?" Based on previous research, it has a significant relationship between purchase intention and green marketing mix. Supported data felt that green products are eco-friendly and healthy. Green promotions influence customers. But people are not highly motivated to move their purchase intention to a green marketing mix. They are not going supermarket to intentionally buy green products.

On that issue, they highly move in the green marketing mix. Such as their packaging and labeling. Those are eco-friendly due to the lack of industry data; it used a preliminary survey. Prepare six questions and select 10 customers for this survey. Questions are mentioned below. Those questions are open-ended. Therefore, not mentioned, it was represented by English letters. Based on Table 1 results of "yes" answers are 34 responses and 36 responses. I decided 1 response represents 1 point. Total points are 70. Over 50% consider this information based on doing research. So, based on these preliminary survey results, create a pie chart.

Table 1: Preliminary survey details

Item	Respondents
Yes	34
No	70

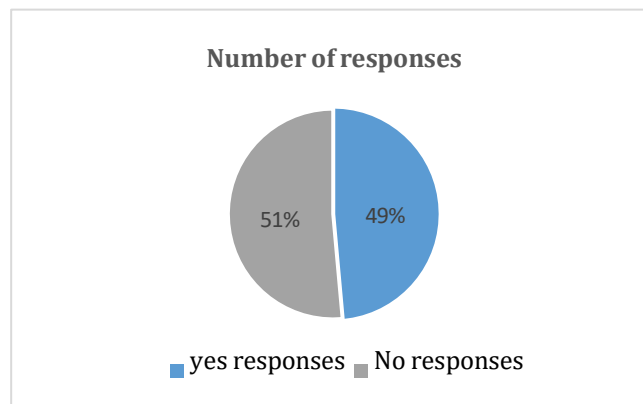


Figure 1: Preliminary Survey

Based on the results of the preliminary survey, customers have an idea the moment of their purchase intention. It will be implemented, and can deeply quantitatively get a conclusion.

1.3 The Objectives of the Research

Those objectives are based on the conceptual framework. General objective based on the overall independent variable as green marketing mix, so when creating general objectives, use the green product, green price, green place, and green promotion separately, with the relationship between the dependent variable as purchase intention.

1.3.1 General Objective

- To determine the influence of the Green Marketing mix in purchase intention in the Matara area

1.3.2 Specific Objectives

- To examine the effect of green products on purchase intention in Matara area

- To analyze the effect of green price on purchase intention in Matara area
- To compare the effect of green place on purchase intention in Matara area
- To find out the effect of green promotion on purchase intention in the Matara area

1.4. Significance of the Study

The scope of the study is limited to the Matara area owing to it having a large number of supermarket customers. The unit of analysis was a selected supermarket in the Matara area. This research assists customers in understanding the green marketing mix, which is affecting their purchase intention, and also when their buying pattern is affecting environmental pollution. Organizations can identify customers' purchase behavior based on green products. Then they can move their business to the green concept.

When customers are using environmental protection goods, it can be helpful to reducing environmental pollution for society. When increasing customer purchase intention, environmental pollution goes up. Being a researcher, this research assists me like understand the factors affecting the purchase intention, green marketing mix, can move with customers.

2. LITERATURE REVIEW

The consumer awareness of green marketing mix and sustainable marketing has encouraged the supermarkets to adopt new marketing strategies. According to the eco-friendly products aim to influence consumers' attitudes and behavior for strong purchase behavior (Dewi and Widyastuti, 2022). The green products are strategically prepared to decrease environmental pollution and enhance sustainable marketing behavior. It can be using eco-friendly raw materials, sustainable manufacturing processes, and sustainable packaging processes. Eco-labeling and product safety is enhancing consumers' trust and intention (Chen and Chang, 2023). According to Dewi and Widyastuti (2022), consumers are more focusing about green products, considering product quality and safety.

According to Wali and Malik (2024) research paper, green price refers to the premium quality with environmentally friendly products due to the comparison between costs. The environmental concerns may

be directly aligned with higher prices and impact on purchase intention compared with environmental benefits and financial benefits. The green price positively impacts of purchase intension with enhance genuine environmental benefits (Andika and Nuvriasai, 2024). Green promotions are involving environment benefits, including sustainable logistics and reducing carbon emissions, and environmentally friendly. According to consumer awareness and trust, positively influencing green advertising and consumption. The misleading promotional practices is directly affected consumer purchase intention toward green products. The promotional activities effectively retain green promotion and enhance positive attitudes for sustainable products (Rahman, Park, and Chi, 2022).

The green place effectively influences purchase intention by including sustainable distribution practices, eco-friendly retail environments, and the availability of sustainable, environmentally friendly products. According to critical factors influencing purchase intention towards green products. The Kumar and Ghodeswar (2022) research paper was reviewed, and environmentally logistics layouts and channels enhance consumer perception of sustainability.

3. RESEARCH METHODOLOGY

Conceptual framework means a theoretical structure of assumptions, principles, and rules that holds together the ideas comprising a broad concept. When considering the conceptual framework green marketing mix is the independent variable and purchase intention is the dependent variable of the study. The green marketing mix has three main factors: green product, green price, green place, and green promotion.

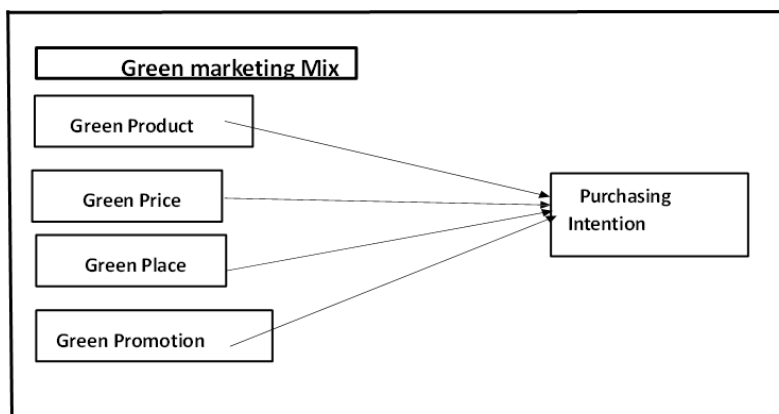


Figure 2: Conceptual Framework

3.1. Research Approach

The operationalization part includes variables, indicators, sources, and measurements. Variables are divided into independent variables and dependent variables. Independent variables are green product, green price, green place, and green promotion, and the dependent variable is purchase intention. All the variables employed in the study were operationalized based on indicators adapted from previous researchers. A Likert scale question was used to get customers' responses for research.

Data analysis techniques are descriptive analysis, correlation analysis, and regression analysis. So, these analysis by using SPSS software. Data analysis was represented to the research objectives of the study. So, this research was created by SPSS version 22.0 for research data analysis. Then collected data from the questionnaire and then testing accuracy.

3.2. Population and Sample

Population and sampling procedures play a vital role in each study. When considering selecting the sample population to collect data, basically, this study will use a convenience technique. The population of the study will be customers from a selected supermarket in Matara. To select the sample researcher will focus on 100 customers from selected supermarkets in the Matara area. It will be used as a convenient method. So it is the nature of current research to be quantitative and examine the effect of independent variables. Example of green price, green product, green place and green promotion on purchase intention.

3.3. Data Collection Method

According to the research problem, this research is suitable for primary data, which means that data gather first time by the researcher and conducted through quantitative research. When part-structured questions come to data collection, the questionnaire will be distributed to the sample, and the questionnaire includes five parts to evaluate dimensions, and another part includes to collect respondents' data. It will be used primarily data from a structured questionnaire. This is a very common method that every researcher tends to use due to its effectiveness and efficiency.

The research is based on a deductive approach where the existing

theories and concepts will be used in order to develop hypotheses and test them through a systematic methodology. The survey method was identified as the most appropriate strategy to perform the research activities. The survey will be conducted on supermarket shoppers.

Sampling can be done either as a probability or non – probability design. A simple random sampling method will be used here, where each respondent gets an opportunity to participate in the survey. Secondary data will be gathered from previously done research articles, books, and the Internet. Primary data were collected through the means of questionnaires. So, in this method, informed all respondents about the all-purpose cleaner corresponding to the condition. The final sample consists of 100 respondents who are purchasing products in supermarkets in the Matara area.

This study was based on the deductive approach as it acknowledges the need to investigate the relationship between variables such as independent and dependent variables. This research study is based on the supermarket platform and the current study selected the sample population from the customers of supermarkets in Matara area. The scope of the study was narrowed down to the Matara area, selected supermarket only. Because of a larger number of supermarket customers. That is the method of analysis path, like the unit of analysis was the individual customer of the supermarket. This study employed the convenience sampling technique to select the sample.

The difficulty in obtaining the demographic details of consumers who patronize the supermarkets has led to convenience sampling under the non- probability sampling technique for collecting data for the study. Convenience sampling techniques is a type of nonprobability sampling in which people are sampled simply because they are "convenient" sources of data for researchers. In probability sampling, each element in the population has a known nonzero chance of being selected through the use of a random selection procedure. Nonprobability sampling does not involve known nonzero probabilities of selection. so subjective methods are used to decide which elements should be included in the sample. In nonprobability sampling, the population may not be well defined. Nonprobability sampling is often divided into three categories: purposive sampling, convenience sampling, and quota sampling (Khan et al. 2020).

4. DATA ANALYSIS AND RESULTS

Sample characteristics mean the socio-demographic of teachers

4.1. Awareness of Green Marketing Mix

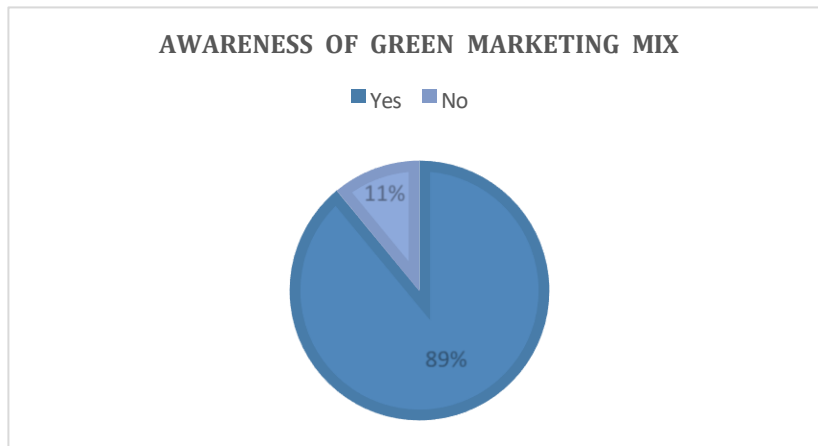


Figure 3: Awareness of Green Marketing Mix

According to Figure 3, 89% respondents are aware of the green marketing mix, and 11% respondents are not aware of the green marketing mix. The green marketing mix is green product, green price, green promotion, and green place. Consumer behavior is based on the search for purchasing, using, evaluating, and disposing of services and products that satisfy their needs. They need to different manner to protect the environment.

4.2. Reliability Analysis

The reliability is concerned with whether the measurement of the concept is accurate. In other hand, reliability analysis is the reliability is how well the instrument consistently (internal reliability) and stably (external reliability) measures whatever concept it measures. So when the item comes under internal consistency means should "hang together as a set" and be capable of independently measuring the same concept, such as that the respondents attach the same overall meaning to each of the items.

The coefficient range is between 0.00 and 1.00. The Cronbach's Alpha is 0.00, which shows poor reliability, and 1.00 shows perfect reliability. Nunnally (1978) has indicated 0.7 and above as acceptable reliability coefficients.

Table 2: Reliability Statistics

Variable	No. of Items	Cronbach's Alpha
Green Product	05	0.70
Green Price	05	0.748
Green Place	05	0.70
Green Promotion	05	0.748
Purchase Intention	05	0.943

Due to the main survey, the coefficients of Cronbach's Alpha are more than 7.0 in all variables. Thus, the data of the main survey is reliable. So based on those variables, are reliable. Variables such as green product, green price, green place, green promotion, and purchase intention. Green place is highly reliable, and other variables are reliable. Such as green product, green price, green promotion and purchase intention which all are above 0.7. In those variables, purchase intention is a more reliable dependent variable which Cronbach's Alpha value of 0.943.

4.3. Correlation Analysis

Table 3: Correlation Analysis

		Product	Price	Place	Purchase Intention	
Promotion	Pearson Correlation	1	-0.007	1.000**	-0.007	.070
	Sig. (2-tailed)		.948	.000	.948	.490
Product	Pearson Correlation		1	-0.007	1.000**	-.220*
	Sig. (2-tailed)			.948	.000	.028
Price	Pearson Correlation			1	-0.007	.070
	Sig. (2-tailed)				.948	.490
	Pearson Correlation				1	-.220*

Place	Correlation				
	Sig. (2-tailed)	.948	.000	.948	.028

The correlation analysis was used to find the correlations existing between the variables. Pearson's coefficient of correlation was used to measure the association between independent variables and the dependent variable. Independent variables of this study are green product, green price, green place, and green promotion under the green marketing mix. The dependent variable is purchase intention. The consequences of the correlation analysis are represented in the above table 3, Correlation analysis.

According to the correlation matrix, green promotion are associated with green promotion. All correlation coefficients of green product, green price, green place, and green promotion show positive relationships. And, all correlation coefficients are statistically significant. According to the correlation matrix, green promotion is associated with purchase intention. Green place and green product are strongly significant and positively correlated. Green price and green promotion positively strongly significant positive correlation. All correlation coefficients of green price and green promotion show positive relationships. And, the correlation coefficients of green product and green price are statistically significant.

The significant association between green product and purchase intention its coefficient of correlation is -0.22 at a 0.05 significant level. ($r = -0.22, p < 0.05$) Next, there is a positive correlation between green price and purchase intention. In this case, the coefficient of correlation is 0.07 at a 0.05 significance level. Further, a positive association exists between green promotion and purchase intention. In this case, the coefficient of correlation is 0.07 at a 0.05 significance level. Green place is negatively correlated with purchase intention is -0.22 at a 0.05 . ($r = -0.22, p < 0.05$). Green promotion and purchase intention are positively correlation is 0.07 at a 0.05 significance level.

4.4. Regression Analysis

A Multiple linear regression analysis was used to investigate the relationships between independent variables and the dependent variable.

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.230 ^a	.053		.033 .97766

Table 5: ANOVA Table

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.178	2	2.589	2.709	.072 ^b
	Residual	92.714	97	.956		
	Total	97.892	99			

Table 6: Coefficients Table

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error			
(Constant)	3.776	.661		5.714	.000
place	-.303	.137	-.219	-2.218	0.029
1					
Promotion	0.84	.121	.0068	.0691	0.049
Product Price	-0.304	0.136	-.220	-2.229	0.028
	0.085	0.123	0.070	.692	0.490

According to the model summary of the regression analysis, R is 0.23, which indicates that the model is successful in predicting elements. R² is the proportion of variance in the dependent variable that can be explained by the independent variables. In the present study, R² is 0.053. Thus, 5.3% of the variation in purchase intention is explained

by green marketing mix factors. F-value is 2.709, and P-value is 0.072 which is not significant at the 0.01 level. This indicates that the variance in purchase intention is not significantly explained by the set of independent variables, which are green marketing mix factors. Such as green price, green place, green product and green promotion.

According to the coefficient table, the regression coefficients of green product, green place and green promotion are statistically significant, and the regression coefficients of green price are statistically insignificant. As the results of the regression analysis, the highest magnitude (0.490) represents the green price. It indicates a positive relationship between green promotion and purchase intention. In this case, the regression coefficient is 0.084 at a 0.01 significance level. A green place is negatively correlation between purchase intention. In this case, the regression coefficient is – 0.303 at a 0.01. Green price is not significant. It significant value is 0.49. Green place, green product, and green promotion is statistically significant. Green products and place are highly significant at the 0.01 level. Green promotion also significant at level of 0.05.

4.5. *Hypotheses Testing*

The coefficients of multiple regression analysis were used to test the hypotheses in the present study.

Table 7: Hypotheses Testing

Hypotheses	Status	Reason
H1: Green Marketing Mix affects purchase intention	Accept	Positively Significant at 0.01 level
H2: Green Product affects purchase intention	Accept	Positively Significant at 0.05 level
H3: Green Price affects purchase intention	Reject	Statistically not Significant
H4: Green Place affects purchase intention	Accept	Positively Significant at 0.05 level
H5: Green Promotion affects purchase intention	Accept	Positively Significant at 0.05 level

5. DISCUSSION OF THE FINDINGS

The key objective of conducting this research was to identify the impact of the green marketing mix on customers' purchasing intention in the context of a selected supermarket in the Matara area. In Sri Lanka, the major supermarket chains from time to time initiate various strategies towards being environmentally friendly. How the supermarkets' green marketing strategies affect the advertisement and ecological packaging, positively related to the green purchase intention. The results confirm the significant positive impact of the green marketing mix on purchase intention.

Research discussed that green products have a significant impact on the purchase intention of customers (Dewi and Widyastuti, 2022). The findings of this study are in line with the findings of previous studies. Making green products available to customers will positively impact on customers' green purchase intention. Price has been identified as one of the main obstacles in the path of purchase intention (Ansar 2013) In contrast to these findings of the study indicates there is no significant impact of green price on green purchase intention. This is in line with the previous research findings of Mulya & Kusumawardhani (2023). If consumers believe that the prices are reasonable, they will purchase green products. Moreover, prior studies have revealed that consumers are willing to pay more for green products. People with high environmental awareness are less sensitive to price and are willing to pay a premium, but based on this research, it does not significant relationship.

There is a significant relationship between consumer purchasing decisions and green places. The findings of this study appear to be inconsistent with the prior findings by failing to establish a significant relationship between green place and consumers' green purchase intention. Therefore, when designing any places to denote sustainability. A green place should have the capability to convince the customers of its greenness. (Khan et al. 2020). The current study supports this with results showing that green promotion will have a significant positive impact on customers' green purchase intention. Advertising and sales promotional campaigns can be used in this regard to communicate to customers the responsibility of society to shift to green products.

6. CONCLUSION & CONTRIBUTIONS

The green product is more significant than other factors. So green products highly influence in customer's purchase intention. The general objective of the impact of green products on purchase intention. After the research results, ensure the green product has a high impact on purchase intention. Green place also has an impact on purchase intention. Hypothesis also accepted. When any organization follow green place concept, they can be influenced purchase intention.

Green promotions also influence in purchase intention. It has a significant relationship. When any organization follow green concept and uses green promotional activities for their promotions. Then it can increase their sales. Green price is not significant relationship with purchase intention. Several limitations as this would guide the researchers to make more helpful suggestions for future research. The fact that this study was limited to the Matara area of Sri Lanka may be considered a limitation of the study.

Future studies may best be carried out with a wider sample covering a larger geographical area. It is recommended that the findings of this study be cross-validated by conducting surveys in other provinces or even other countries and carrying out comparisons between different cultures to examine how consumer behavior changes according to the setting/context. The study was based entirely on primary data gathered through questionnaires.

This study is based on quantitative research, and using further studies could incorporate qualitative techniques such as interviews and focus group discussions as well, for a more precise analysis of consumers' green purchase intention. This study examined the impact of the green marketing mix on consumers' green purchase intention. However, only a percentage of variance in green purchase intention is explained by the green marketing mix. Therefore, future researchers can incorporate other predictors of green purchase intention, such as ethical self-identity.

REFERENCES

Andika, R., & Nuvriasari, A. (2024). The effect of green marketing mix, environmental awareness, and green innovation on green

- purchase intention. *Review of Humanities and Social Sciences*, 6(1), 45–59. <https://doi.org/10.1234/rhss.2024.369>
- Chen, Y.-S., & Chang, C.-H. (2023). Green product attributes, green trust, and green purchase intention. *Business Strategy and the Environment*, 32(2), 789–803. <https://doi.org/10.1002/bse.3189>
- Dewi, N. K., & Widyastuti, S. (2022). The influence of green marketing mix on green buying intention. *International Journal of Sustainability Studies*, 14(3), 211–224.
- Gajanayake, R. (2014). *The impact of selected visual merchandising techniques on patronage intentions in supermarkets: A study based on Colombo District* (Unpublished master's thesis). [University Name], Sri Lanka.
- Info, A., & On, R. (2016). *The influence of green marketing on consumer purchase behavior*. [Publisher/Institution if available].
- Khan, N., Sarwar, A., & Tan, B. C. (2021). Determinants of purchase intention of halal cosmetic products among Generation Y consumers. *Journal of Islamic Marketing*, 12(8), 1461–1476. <https://doi.org/10.1108/JIMA-11-2019-0248>
- Kumar, P., & Ghodeswar, B. M. (2022). Green distribution and sustainable retailing: Impact on consumer purchase intention. *Journal of Retailing and Consumer Services*, 65, 102872. <https://doi.org/10.1016/j.jretconser.2021.102872>
- Mahmoud, T. O. (2018). Impact of green marketing mix on purchase intention. *International Journal of Advanced and Applied Sciences*, 5(2), 127–135.
- Mulya, R., & Kusumawardhani, A. (2023). Green marketing and purchase intention: The mediating role of green brand knowledge. *International Journal of Business and Society*, 24(2), 98–112.
- Rahman, I., Park, J., & Chi, C. G.-Q. (2022). Consequences of greenwashing: Consumers' reactions to green promotional

claims. *Journal of Business Research*, 141, 529–540.
<https://doi.org/10.1016/j.jbusres.2021.11.067>

Wali, A., & Malik, M. (2025). Influence of green marketing mix on consumer purchase intention: Evidence from a developing economy. *Journal of Emerging Markets*, 10(1), 1–15.JA

THE INFLUENCE OF GREEN ADVERTISEMENTS AND GREEN BRAND AWARENESS ON GREEN CONSUMER PURCHASE INTENTION: A STUDY AMONG KEELLS CUSTOMERS IN WESTERN PROVINCE, SRI LANKA.

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ABSTRACT

Growing global awareness of environmental issues has increased the importance of sustainable consumption. However, this rising awareness, a noticeable behavioral gap persists in many developing countries, including Sri Lanka. This study examines the influence of green advertisements and green brand awareness on green consumer purchase intention among Keells customers in the Western Province of Sri Lanka. A quantitative research design was adopted, and primary data were collected through a structured self-administered questionnaire distributed to 150 customers, of which 105 valid responses were obtained. A non-probability convenience sampling technique was employed due to accessibility constraints. The collected data were analysed using the Statistical Package for Social Sciences (SPSS) version 25, applying reliability analysis, correlation analysis, and multiple regression techniques.

The results demonstrate excellent internal consistency and construct validity, with Cronbach's alpha values exceeding 0.90 for all constructs. Correlation analysis revealed significant positive relationships among green advertisements, green brand awareness, and green consumer purchase intention. Among the independent variables, green brand awareness exhibited the strongest association with purchase intention. Multiple regression analysis further confirmed that both green advertisements ($\beta = 0.354$, $p < 0.001$) and green brand awareness ($\beta =$

0.580, $p < 0.001$) significantly influence green consumer purchase intention, collectively explaining 81% of the variance.

The findings indicate that while green advertising plays an important role in shaping consumer responses, long-term green brand awareness exerts a stronger influence on purchase intention. This study contributes empirical evidence from a developing country context and offers practical insights for retailers and marketers aiming to promote sustainable consumption through credible and consistent green communication strategies.

Keywords: Green Advertising, Green Brand Awareness, Green Consumer Purchase Intention, Sustainable Consumption, Retail Marketing, Sri Lanka

1. INTRODUCTION

Over the past few decades, scholarly research has explored the rise of environmentally conscious customers and the deliberate incorporation of environmental consideration into business models. Apart from the rising awareness of environmental concerns, many consumers in developing countries are influenced more by traditional factors rather than environmental considerations. This gap offers both opportunities and obstacles for marketers and legislators who are looking to encourage sustainable purchasing patterns. By examining the emergence of environmentally conscious consumers, regulatory frameworks, and stakeholder views, earlier research from the 1980s to the early 2000s established the groundwork and highlighted the significance of incorporating environmental issues into marketing and corporate strategy. This context highlights the importance of understanding green consumer purchase intention in Keells in order to develop effective strategies that bridge the gap between consumers' awareness of environmental issues and actual purchase of green products.

Green advertising is essential to influence customer attitudes and encourage sustainable buying practices. Good green ads raise consumers' awareness of eco-friendly products, which affects their attitudes and purchase intentions (Sun et al., 2021). These advertisements serve as external stimuli that generate positive

emotions and cognitive responses, fostering a stronger green brand awareness. Green brand awareness, characterized by consumers' ability to recognize and remember environmentally responsible brands, is crucial for building trust and shaping purchasing decisions (Widodo, 2023), (Zhou et al., 2021). When consumers are aware of a green brand, they are more likely to associate it with positive environmental values, which enhances their willingness to purchase eco-friendly products (Tan et al., 2022); (Ahmad et al., 2022).

Furthermore, as consumers' perceptions of brand reputation and environmental commitment influence their purchase intention has increased green brand awareness through advertising activities can lead to higher green purchase intentions (Alamsyah et al. & Nguyen-Viet, 2018, 2022). Overall, strategic green advertising effectively elevates brand awareness and positively impacts green consumer purchase intention toward sustainable products.

The primary aim of this research is to explore the determinants that influence the intention to purchase eco-friendly products or green consumer purchase intention among Keells customers in Sri Lanka's Western Province. Specifically, the study examines the impact of green advertisements and brand awareness on green consumer purchase intention. By shedding light on these factors, this study aims to provide meaningful insights into green consumer purchase intention while addressing the key factors that shape the adoption of environmentally friendly products among Keells customers in the Western Province.

Beyond marketing communication elements, green consumer purchase intention in Sri Lanka may be influenced by contextual variables such as collectivist cultural values and economic accessibility. When making judgments about what to buy, Sri Lankan consumers frequently rely on social trust, family influence, and community standards, which may make brand recognition more important than specific advertising messaging. Additionally, customers' capacity to convert environmental concern into actual purchasing intention may be reduced by price sensitivity and the perceived affordability of green items in developing economies. Although the current study does not experimentally evaluate these elements, recognizing their impact improves the research's originality and contextual relevance and offers pathways for further research.

2. LITERATURE REVIEW

2.1 Green Advertisement

Green advertising is advertisements that promote products, services, ideas, or organizations' ability to help or reduce environmental harm. Green living is an attempt to carry out life in an eco-friendly, environmentally responsible manner and an attempt to minimize the size of our ecological footprint. Environmental awareness is seen as the growth and development of awareness, understanding, and consciousness toward the biophysical environment and its problems, including human interactions and effects. Environmental attitude is defined as a learned predisposition to respond consistently favorable or unfavorable manner with respect to the environment (Rashid, 2009).

Following this, the following hypothesis was developed:

H1: Green Advertisements have a significant positive impact on Green Consumer purchase intention among Keells customers in the Western Province.

2.2 Green Brand Awareness

Green brand awareness, defined as the degree to which consumers are familiar with a brand's environmental practices and commitments, plays a crucial role in shaping buying behavior and fostering brand loyalty (Ahmad, Madi, Abuhashesh, Nusairat, & Complexity, 2020). Green brand awareness is characterized by the possibility of identifying and remembering (RM) the characteristics of a brand that is dedicated to protecting the environment (Rahmadhani & Widodo, 2023). Green brand awareness denotes the extent to which customers identify and remember a brand as eco-friendly. Awareness constitutes the basis of consumer decision-making and directly influences purchasing behavior, as stated by Burki et al. (2022).

2.3 Green Brand Awareness Consumer Buying Behavior

As environmental issues become more pressing, understanding the relationship between green brand awareness and consumer purchasing decisions is critical for brands seeking to capitalize on this growing market (Adamkiewicz, Kochańska, Adamkiewicz, Łukasik, & Chemistry, 2022). Eco-friendly brands, distinguished by their sustainable methods and goods, have garnered considerable

popularity among environmentally aware consumers. This analysis examines the interrelated functions of green brand awareness, green brand image, and green brand loyalty in shaping customer purchasing behavior (Chang, Wang, & Lin, 2020).

Following this, the following hypothesis was developed:

H2: Green Brand Awareness has a significant positive impact on Green Consumer purchase intention among Keells customers in the Western Province.

2.4 Green Purchase Intention

Green purchase intention refers to the tendency of consumers to buy an environmentally friendly product. Consumers purchase these brands when they believe they offer the right quality or product features. On the other hand, purchase intention can be understood as a combination of consumer interest in buying a product and the possibility of buying it (Sohn & Kim, 2020). Consumers have an awareness of the importance of environmental sustainability. Green brand awareness can be interpreted as the ability of consumers to know and remember that the brand shows environmentally friendly products. This means consumers can recognize and consider the impact of being environmentally friendly.

While previous studies predominantly indicate a favorable correlation between green advertising and consumer purchasing intention, the intensity of this correlation differs across various circumstances. Research from developed economies indicates that consumers are wary of green promises because of worries about greenwashing (Chen, 2010; Hussain et al., 2020). However, due to less market saturation of sustainability messaging, research in underdeveloped markets suggests that green advertising may still be persuasive (Bramah, 2015). This discrepancy emphasizes the need to investigate how green brand awareness and green advertising work together in developing nations like Sri Lanka.

3.METHODOLOGY/METHODS

Conceptual Framework

This research investigates two independent variables and one dependent variable, as shown in Figure 1.

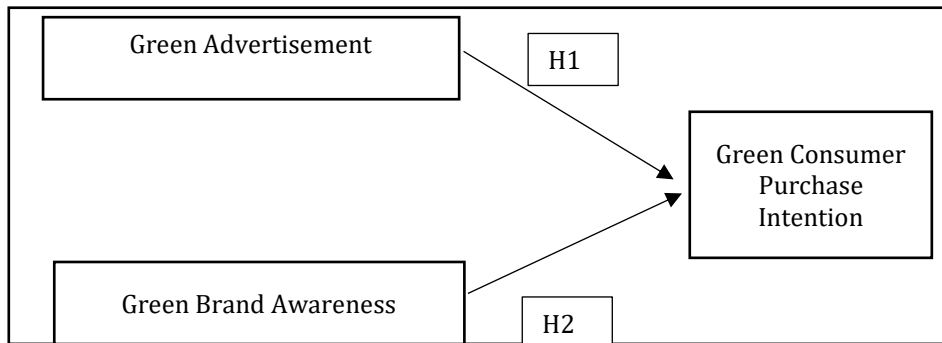


Figure 1: Conceptual Framework

Source: Author's impression based on literature

3.1 Research Design

The research adopts positivism for objective analysis and employs a deductive approach to test hypotheses. A survey strategy gathers primary data using structured questionnaires with a mono-method quantitative design, enabling statistical analysis. A quantitative, cross-sectional survey design was employed to capture consumer perceptions at a single point in time.

3.2 Sample and Sampling Technique

The target population consisted of Keells customers residing in the Western Province of Sri Lanka. Due to accessibility constraints and the exploratory nature of the study, a non-probability convenience sampling technique was employed. Although this approach limits generalizability, it is considered appropriate for behavioral studies in retail settings where the population size is undefined and access to a sampling frame is restricted.

3.3 Data Collection Instrument

Data collection is conducted using a structured self-administered questionnaire with closed-ended questions. The questionnaire was designed using a five-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree" to measure responses. A structured questionnaire was developed and delivered to 150 customers. And 105 respondents have given their responses.

3.4 Data Analysis

The collected data were analyzed using SPSS version 25. Reliability analysis, factor analysis, correlation analysis, and multiple regression were employed to test the study hypotheses.

3.5 Ethical Considerations

Ethical standards were strictly maintained throughout the study. Participation was voluntary, informed consent was obtained, and respondents were assured of confidentiality and anonymity. No personal identifying information was collected.

4. DATA ANALYSIS & RESULTS

4.1 Demographic Profile

The gender, age group, monthly income, education, and district in Western Province are the demographic distribution of the research participants in this study. There were 105 responses collected from the 105 sample of Keells customers. The study shows that the majority of the respondents were female, which represents 60% and 40% were male customers, which reflects the gender balance as well. The majority of the respondents were young to middle-aged adults age group of 26 to 35, and 49.5% and the age group 18 to 25 shows 35.2%. This indicates that the majority of the keell's customers were young customers who strongly recognized the green marketing initiatives.

4.2. Reliability Analysis

Table 1: Reliability Statistics

Cronbach's Alpha	N of Items
0.966	19

For this study, reliability analysis demonstrated excellent internal consistency of all the variables, which indicates a Cronbach's alpha value of more than 0.90. For the overall scale and the green consumer purchase intention variable that Cronbach's Alpha value has exceeded 0.90, and both green advertisements and the green brand awareness Cronbach's Alpha value were 0.901, indicating high reliability. The findings of the study indicate the measures used for green advertisements, green brand awareness, and green consumer purchase intention were reliable, and also that the intended concepts have been captured consistently.

4.3 Factor Analysis for Construct Validity

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.772
Bartlett's Test of Sphericity	Approx. Chi-Square	301.404
	Df	3
	Sig.	.000

Exploratory factor analysis was used to evaluate construct validity. The findings verified the research constructs' unidimensionality and validated acceptable factor loadings. As a result, the measures were considered suitable for further regression and correlation studies.

4.4 Correlation Analysis

Table 6: Correlations

		Mean_GA	Mean_GBA	Mean_GCPI
Mean_GA	Pearson	1	.851**	.847**
	Correlation			
	Sig. (2-tailed)		.000	.000
	N	105	105	105
Mean_GBA	Pearson	.851**	1	.881**
	Correlation			
	Sig. (2-tailed)	.000		.000
	N	105	105	105
Mean_GCPI	Pearson	.847**	.881**	1
	Correlation			
	Sig. (2-tailed)	.000	.000	
	N	105	105	105

****.** Correlation is significant at the 0.01 level (2-tailed).

To examine the relationships between the key study variables, such as Green Advertisement (GA), Green Brand Awareness (GBA), and Green Consumer Purchase Intention (GCPI), a Pearson correlation analysis was conducted. The results, presented in Table 4.4, respectively

strong, positive, and statistically significant bivariate correlations among all constructs.

A strong relationship was found between Green Brand Awareness and Green Consumer Purchase Intention ($r = .881$, $p < .001$), which was closely followed by the correlation between Green Advertisement and Green Consumer Purchase Intention ($r = .847$, $p < .001$). Additionally, a very substantial correlation ($r = .851$, $p < .001$) was found between the two independent variables, Green Brand Awareness and Green Advertisement.

4.5 Multiple Regression Analysis

Multiple Regression Analysis in the current study, there are two independent variables. Therefore, the researchers determined the strength of the relationship between the independent and dependent variables using multiple regression analysis.

Table 7: Model Summary

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	.900 ^a	.810	.806		3.46543

a. Predictors: (Constant), Mean_GBA, Mean_GA

Based on Table 7, the adjusted R square value is 0.806, and it can be summarised that green advertisement and green brand awareness can explain 81% of the variation of green consumer purchase intention among Keells customers in Western Province, Sri Lanka.

Table 8: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5225.307	2	2612.653	217.554	.000 ^b
	Residual	1224.941	102	12.009		
	Total	6450.248	104			

a. Dependent Variable: Mean_GCPI

b. Predictors: (Constant), Mean_GBA, Mean_GA

As shown in Table 8, the output of the ANOVA test Sig. The value is 0.00. Therefore, it can be concluded that the model is statistically significant at the 95% confidence level. It explains that the independent variables of green advertisements and green brand awareness significantly influence the Green Consumer Purchase Intention of Keells Customers in Western Province, Sri Lanka.

Table 9: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.355	1.448		3.007	.003		
	Mean_GA	.603	.140	.354	4.302	.000	.276	3.629
	Mean_GBA	.959	.136	.580	7.053	.000	.276	3.629

a. Dependent Variable: Mean_GCPI

Table 9 shows that Green Advertisement (GA) and Green Brand Awareness (GBA) are significant factors in the Green Consumer Purchase Intention of Keells Customers in Western Province, Sri Lanka, as they have positive beta values and Sig values of less than 0.05.

4. DISCUSSION OF THE FINDINGS

There is a strong positive relationship between green advertisement and green brand awareness. The reason behind this relationship is that if companies use truly environmentally friendly and green claims in their advertisements and devise their marketing and advertising strategies in environmental concern, then it will persuade the existing and potential customers to purchase the environmentally friendly products (Zhu, 2013).

The analysis leads to the strong conclusion that both Green Advertisement and Green Brand Awareness are powerful, statistically significant drivers of Green Consumer Green Consumer Purchase Intention. The multiple regression model confirmed both hypotheses, demonstrating that first hypothesis (H1) is accepted. The Green Advertisement has a significant positive impact ($\beta = 0.354$, $p < 0.001$) on Green Consumer Purchase Intention. This demonstrated that Kell's green advertisements have a direct impact on buying green products.

And the second hypothesis(H2) is also accepted. That demonstrated that Green Brand Awareness has a significant and substantially stronger positive impact ($\beta = 0.580$, $p < 0.001$) on green consumer purchase intention. This shows that the most critical factor is stating recognition and perception of Keells as an authentic green brand, while advertising is important.

There is a strong conceptual correlation among these variables, as seen by the substantial correlations found between green advertising, green brand awareness, and Green Consumer Purchase Intention. The variance inflation factor values stayed within acceptable bounds despite multicollinearity, indicating that the regression results are trustworthy. These constructs may indicate interrelated aspects of a general green purchasing orientation among Sri Lankan consumers, according to the factor analysis's extraction of a single factor. This result is consistent with earlier studies that indicate consumers in collectivist cultures typically interpret sustainability-related cues holistically rather than as discrete impacts.

Despite their close relationship, green brand awareness and green advertising are conceptually different concepts. While green brand awareness is customers' cumulative identification and recall of a brand's environmental commitment developed over time, green advertising refers to firm-controlled communication initiatives intended to promote environmentally responsible themes. Brand awareness is a cognitive result that endures beyond specific campaigns, whereas advertising functions as an antecedent stimulus. This study can evaluate these constructs' independent impact on green customer purchasing intention by differentiating them.

5. CONCLUSION & CONTRIBUTIONS

In conclusion, the best strategy to encourage green purchasing among Keells customers in Sri Lanka is not only to inform them through

commercials, but also to make sure the advertisements successfully establish a recognizable and trustworthy green brand identity in their minds.

This research provides both theoretical and practical contributions. This study provides crucial empirical validation from a South Asian developing nation context. It extends established theories of Green Consumer Purchase Intention, which have predominantly been tested in Western, developed economies, confirming their relevance and revealing nuanced insights in a different socio-economic setting. The model's high explanatory power (81%) positions Green Advertisement and Green Brand Awareness as a parsimonious yet highly effective combination for explaining Green Consumer Purchase Intention in the retail sector, offering a strong foundation for future research. Practical contributions, including marketers and managers at Keells and similar retailers in emerging markets, the findings offer a clear and actionable strategic roadmap. They should maintain and refine high-quality green advertisements that clearly communicate environmental commitments. Marketing strategies that focus on long-term brand building over short-term promotional goals. Need to ensure consistency as well, the strong link between awareness and Green Consumer Purchase Intention means that all brand touchpoints must consistently reflect the green values promised in ads.

5.1 Societal and Policy Implications

Beyond managerial implications, the findings of this study hold relevance for policymakers and sustainability advocates in Sri Lanka. The strong influence of green brand awareness suggests that national sustainability campaigns should focus on building long-term trust and credibility rather than short-term promotional messaging. Regulatory bodies may also utilize these insights to strengthen guidelines on green advertising claims, ensuring transparency and preventing greenwashing. Consumer education programs led by government agencies or NGOs could further enhance awareness and encourage responsible consumption behaviors aligned with national sustainability goals.

5.2 Limitations and Recommendations for Future Research

Despite its robust findings, this study has limitations that present opportunities for future research. The use of convenience sampling in the Western Province limits the generalizability of the findings to all Keells customers in Sri Lanka. The cross-sectional design provides a

snapshot in time but cannot establish causality with absolute certainty.

Future studies should employ a longitudinal design to trace the causal relationship between GA, GBA, and GCPI over time. And also need to use a stratified random sampling technique to enhance the representativeness of the findings across Sri Lanka. In order to build a more comprehensive model of Green Consumer Purchase Intention in Sri Lanka need to identify mediating or moderating variables for the study.

REFERENCES

- Abd Rahim, M. H., Ahmad Zukni, R. Z. J., Ahmad, F., & Lyndon, N. (2012). Green Advertising and Environmentally Responsible Consumer Behavior: The Level of Awareness and Perception of Malaysian Youth. *Asian Social Science*, 8(5). <https://doi.org/10.5539/ass.v8n5p46>
- Ali, I., Naushad, M., & M. M., S. (2020). Do trust and corporate social responsibility activities affect purchase intentions? An examination using structural equation modeling. *Innovative Marketing*, 16(4), 62–73. [https://doi.org/10.21511/im.16\(4\).2020.06](https://doi.org/10.21511/im.16(4).2020.06)
- Benabou, R., & Tirole, J. (2010). Individual and Corporate Social Responsibility. *Economica*, 77(305), 1–19. <https://doi.org/10.1111/j.1468-0335.2009.00843.x>
- Braimah, M. (2015). Green brand awareness and customer purchase intention. *Management Science Letters*, 5(10), 895–902. <https://doi.org/10.5267/j.msl.2015.8.007>
- Chen, Y.-S. (2010). The Drivers of Green Brand Equity: Green Brand Image, Green Satisfaction, and Green Trust. *Journal of Business Ethics*, 93(2), 307–319.
- Clarke, A., & Fuller, M. (2010). Collaborative Strategic Management: Strategy Formulation and Implementation by Multi—Organizational Cross—Sector Social Partnerships. *Journal of Business Ethics*, 94(2), 85–101. <https://www.jstor.org/stable/pdf/29789687.pdf>
- Dewi, A. I. (2017). PENGARUH KINERJA GREEN BRANDING

TERHADAP GREEN BRAND PREFERENCE PADA INDUSTRI GREEN COSMETICS DI KOTA BANDUNG. *Jurnal Manajemen Indonesia*, 14(3), 181. <https://doi.org/10.25124/jmi.v14i3.368>

Hussain, S. A., Haq, M. A. U., & Soomro, Y. A. (2020). Factors Influencing Consumers' Green Purchase Behavior: Green Advertising as Moderator. *Marketing and Management of Innovations*, 4, 144–153. <https://doi.org/10.21272/mmi.2020.4-11>

Issa El-hussain, Batul. (2024). The Impact of Green Marketing on Consumer Purchase Intention. *Ssrn.com*. <https://doi.org/10.2139/ssrn.4816341>

Mari, I. H., Mahfooz, M., Hussain, A., & Uzir, U. H. (2024). Does Green Brand Awareness Influence Buying Behavior? Examining the Impact of Green Brand Image and Green Brand Loyalty. *International Journal of Contemporary Business and Economics (IJCBE)*, 2(2), 31–40. <https://doi.org/10.61338/ijcbe.v2i2.54>

Obaid, M., & Rashid, D. S. (2024). Green Marketing: The Impact of Green Advertising on Consumer Purchasing Behavior. *Electronic Green Journal*, 1(50). <https://doi.org/10.5070/g315061485>

Popova, O. (2020). GREENMARKETING: DISTRIBUTION, SALES, SERVICE. *Economical*, 1(1(22)), 90–96. [https://doi.org/10.31474/1680-0044-2020-1\(22\)-90-96](https://doi.org/10.31474/1680-0044-2020-1(22)-90-96)

Sharma, V., Poulouse, J., Mohanta, S., & Elizabeth Antony, L. (2018). Influence of the dimensions of CSR activities on consumer purchase intention. *Innovative Marketing*, 14(1), 23–32. [https://doi.org/10.21511/im.14\(1\).2018.03](https://doi.org/10.21511/im.14(1).2018.03)

Theocharis, D., & Tsekouropoulos, G. (2025). Sustainable Consumption and Branding for Gen Z: How Brand Dimensions Influence Consumer Behavior and Adoption of Newly Launched Technological Products. *Sustainability*, 17(9), 4124. <https://doi.org/10.3390/su17094124>

Yan, R.-N., Hyllegard, K. H., & Blaesi, L. F. (2012). Marketing eco-fashion: The influence of brand name and message explicitness. *Journal of Marketing Communications*, 18(2), 151-168. <https://doi.org/10.1080/13527266.2010.490420>

ADOPTION OF GREEN SUPPLY CHAIN PRACTICES FOR SUSTAINABLE SHRIMP AQUACULTURE IN SRI LANKA: DRIVERS AND BARRIERS

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ABSTRACT

Shrimp aquaculture is a major contributor to Sri Lanka's seafood exports, yet the industry faces rising environmental concerns and increasing pressure from international markets to meet sustainability standards. Green Supply Chain Management (GSCM) practices offer opportunities to enhance environmental performance while supporting long-term sectoral resilience. However, the extent to which shrimp producers adopt these practices and the factors that influence or hinder adoption remains under explored in the Sri Lankan context. This study examines the adoption of GSCM practices among nine export-oriented shrimp aquaculture firms and identifies the key drivers and barriers shaping adoption. Using a mixed-method approach, data were collected through structured questionnaires and supported with secondary information from NAQDA, FAO, and company records. Results show that renewable energy (78%), waste water treatment (67%), and sustainable feed (56%) are the most widely adopted practices, while recyclable packaging remains limited (22%). Key drivers motivating adoption include export market demand, certification requirements, long-term cost-saving potential, environmental responsibility, and improved brand reputation. Conversely, high initial investment costs, lack of technical expertise, limited infrastructure, and weak policy incentives act as significant barriers. The findings demonstrate that GSCM adoption in Sri Lankan shrimp aquaculture is progressing but uneven. Understanding these drivers and barriers is essential for strengthening sustainability transitions within

the sector. The study provides insights for policymakers, industry leaders, and certification bodies seeking to promote environmentally responsible and globally competitive shrimp production.

Keywords: *Green Supply Chain, Shrimp Aquaculture, Sustainability,*

1. INTRODUCTION

1.1 Background of the Study

Aquaculture has emerged as one of the fastest-growing global food production sectors, contributing significantly to food security, livelihoods, and international trade. Shrimp aquaculture, in particular, has become a valuable export commodity due to high global demand and favorable market prices. In Sri Lanka, shrimp farming represents a critical component of the seafood export sector, generating employment in coastal regions and contributing to national economic growth.

However, the sector faces multiple environmental and operational challenges. These include high energy consumption, waste water discharge, sludge accumulation, variable feed efficiency, and disease outbreaks, all of which affect both ecological sustainability and long-term profitability. As global buyers increasingly demand sustainably farmed seafood, producers must comply with stricter environmental and supply chain standards.

Green Supply Chain Management (GSCM) has gained prominence as a framework for minimizing environmental impacts throughout the production cycle, from input sourcing to waste disposal. GSCM encourages the use of renewable energy, water recycling, sustainable feed, eco-friendly packaging, and improved waste management. While many countries have integrated GSCM practices into aquaculture, adoption in Sri Lanka is still emerging.

1.2 Research Problem

Although Sri Lankan shrimp exporters increasingly recognize the importance of environmental sustainability, the adoption of green supply chain management (GSCM) practices across the sector remains

uneven. While some large and export-oriented firms have invested in renewable energy systems and wastewater treatment facilities, many small and medium-scale producers lack the financial resources, technical expertise, or institutional support required to implement even basic green practices. Similar adoption gaps have been observed in aquaculture and agri-food sectors in other developing countries, where high capital costs and limited awareness act as major constraints to GSCM implementation (Sarkis et al., 2011; Erol et al., 2011).

International seafood markets increasingly demand compliance with sustainability standards, traceability systems, and environmental certifications as prerequisites for market access (FAO, 2020). Failure to adopt such practices exposes exporters to risks such as higher operating costs, reduced competitiveness, and potential rejection in eco-sensitive markets. Despite these pressures, empirical research examining the actual adoption patterns of GSCM practices within Sri Lanka's shrimp aquaculture sector remains limited. Existing local studies tend to focus on production efficiency or environmental impacts, rather than supply chain-level sustainability and cost implications (Fernando & Ekanayake, 2020).

As a result, there is insufficient empirical evidence on:

- which green supply chain practices are currently adopted by Sri Lankan shrimp exporters,
- what internal and external factors motivate firms to adopt these practices, and
- what barriers restrict wider and more effective implementation.

Addressing this research gap is essential for informing policy decisions, designing targeted incentives, and supporting the transition toward sustainable and cost-efficient shrimp supply chains in Sri Lanka.

1.3 Purpose of the Study

The purpose of this study is to examine the extent of GSCM adoption in Sri Lanka's shrimp aquaculture sector and to analyze the key drivers and barriers influencing adoption.

1.4 Research Objectives

- To identify the current adoption levels of GSCM practices in shrimp aquaculture.
- To examine the drivers motivating shrimp producers to adopt green supply chain practices.
- To analyze the barriers hindering wider adoption.

1.5 Significance of the Study

This study holds significant value for industry, policy, and academic discourse. For the shrimp aquaculture industry, the findings help producers identify which green supply chain practices are most feasible and impactful, offering practical guidance for firms preparing to meet export certification standards such as ASC and BAP. From a policy perspective, the study provides evidence-based insights that can support government agencies in designing effective incentives, regulatory frameworks, and development strategies to promote environmental sustainability within the aquaculture sector. Academically, the research fills a notable gap in the literature by examining GSCM adoption in an emerging economy context, an area that remains underexplored. It also contributes a structured driver-barrier framework that can be used as a foundation for future studies on sustainable aquaculture and supply chain management in Sri Lanka and comparable regions.

2. LITERATURE REVIEW

2.1 Green Supply Chain Management (GSCM): Concept and Evolution

Green Supply Chain Management (GSCM) is an integrated approach that seeks to reduce the environmental impact of production processes across the entire supply chain. It includes environmentally responsible practices such as sustainable input sourcing, efficient energy use, waste reduction, recycling, eco-friendly packaging, and responsible disposal of by-products.

Scholars define GSCM as a systemic approach to managing material flow, information flow, and capital flow with minimal ecological harm (Sarkis et al., 2011). Globally, Green Supply Chain Management (GSCM) has expanded beyond traditional manufacturing sectors to

include agriculture, fisheries, and seafood processing industries. This transition has been driven by growing international concern over environmental sustainability, food safety, and resource efficiency (Sarkis et al., 2011; FAO, 2020). The increasing adoption of sustainability certifications, eco-labels, and traceability systems in global seafood markets has further accelerated this shift, particularly in export-oriented industries (FAO, 2020). As a result, sustainable supply chain practices are no longer optional but have become a critical requirement for maintaining competitiveness and long-term viability in international markets (Porter & van der Linde, 1995).

2.2 GSCM in Aquaculture

Aquaculture supply chains are recognized as highly resource-intensive systems that exert considerable pressure on the environment due to their dependence on water, energy, feed, and chemical inputs. According to FAO (2020), intensive shrimp farming in particular contributes to high levels of water extraction, nutrient pollution from feed residues, and elevated energy consumption associated with aeration and pumping systems. These environmental pressures make the adoption of Green Supply Chain Management (GSCM) practices essential for improving the sustainability performance of aquaculture operations. In practice, GSCM within aquaculture typically includes a range of environmentally responsible measures such as water recycling and effluent treatment, which help reduce chemical discharge and improve water quality; renewable energy systems, especially solar-powered aeration, that lower carbon emissions and operational energy costs; and sustainable feed sourcing strategies that minimize the ecological footprint associated with feed production. Additional common practices include biological waste management, such as sludge composting to reduce pond bottom contamination; eco-friendly and recyclable packaging materials that decrease plastic waste; and the adoption of efficient transport and cold-chain logistics systems that reduce fuel consumption and preserve product quality during distribution. Studies from countries such as Vietnam, Thailand, and India have demonstrated that these GSCM interventions not only reduce environmental impacts but also enhance compliance with international sustainability standards and market requirements (Tran et al., 2020; Kumar et al., 2019). However, despite these documented benefits, the adoption of GSCM practices

within Sri Lanka's aquaculture sector remains limited, highlighting the need for further empirical investigation.

2.3 Drivers of GSCM Adoption in Aquaculture

The adoption of Green Supply Chain Management (GSCM) practices in aquaculture is influenced by a combination of market, regulatory, operational, and strategic drivers. Global seafood markets, particularly in regions such as the European Union, United States, and Japan, increasingly demand traceable, eco-friendly, and sustainably certified shrimp products, creating strong market-driven incentives for producers to integrate greener practices throughout their operations. Several studies have shown that certifications such as the Aquaculture Stewardship Council (ASC) and Best Aquaculture Practices (BAP) act as powerful motivators, as compliance with these standards is often required to maintain access to high-value export markets (Bush et al., 2013; Tran et al., 2020). Regulatory and institutional pressures also play a significant role, with environmental audits, effluent discharge regulations, and licensing requirements compelling firms to adopt measures that reduce pollution and enhance resource efficiency. Beyond external pressures, internal operational motives, such as improving system efficiency, reducing waste, lowering long-term production costs, and minimizing disease risks, encourage aquaculture firms to explore renewable energy options, adopt better feed management practices, and implement waste water treatment systems. These improvements not only contribute to environmental sustainability but also enhance farm-level productivity and stability. Strategic considerations such as strengthening corporate reputation, demonstrating environmental responsibility, and differentiating products in competitive global markets further motivate producers to adopt GSCM practices. As noted by Sarkis et al. (2011), firms with greater exposure to international supply chains tend to exhibit stronger commitments to sustainability due to heightened institutional and competitive pressures. This is especially relevant for shrimp exporters in developing countries, including Sri Lanka, where international buyer expectations significantly influence sustainability transitions.

2.4 Barriers to GSCM Adoption in Aquaculture

Although GSCM offers clear environmental and operational benefits, its adoption in aquaculture is limited due to several constraints. High

initial investment costs for technologies such as renewable energy systems, effluent treatment plants, and sludge management units remain the most significant barrier, especially for small and medium-scale producers (Kumar et al., 2019). Many firms also lack the technical expertise needed to operate green technologies effectively, leading to hesitancy in adopting unfamiliar systems (Tran et al., 2020). Inadequate infrastructure, including unreliable power supply and limited access to eco-friendly packaging materials, further slows adoption. Weak policy support such as insufficient incentives, training programs, and environmental monitoring reduces motivation for sustainability investments. In addition, not all buyers provide higher prices for sustainable shrimp, reducing the commercial appeal of adopting costly green practices (Bush et al., 2013). Together, these factors create economic, technical, and institutional challenges that hinder widespread GSCM adoption in the aquaculture sector.

2.5 GSCM in Sri Lankan Shrimp Aquaculture: Contextual Review

Sri Lanka's shrimp aquaculture sector is heavily export-oriented, supplying international markets where sustainability standards are increasingly emphasized. According to NAQDA, local shrimp farms continue to face several environmental and operational challenges, including ammonia accumulation, high energy consumption, disease vulnerability, inefficient feed utilization, and inadequate sludge management. While a few large-scale firms have begun adopting renewable energy technologies and waste water treatment systems to comply with global market requirements, many small and medium producers still rely on traditional production practices due to financial and technical constraints. Existing Sri Lankan research has mainly focused on environmental impacts, disease management, and feed efficiency, with limited attention given to supply chain sustainability or the broader drivers and barriers influencing the adoption of green practices. This lack of comprehensive, supply-chain-oriented sustainability research indicates a substantial gap in the literature. The present study addresses this gap by examining the adoption of GSCM practices and identifying the key factors that enable or hinder sustainability transitions within Sri Lanka's shrimp aquaculture industry.

3. METHODOLOGY

3.1 Research Philosophy

This study adopts a pragmatic research philosophy, which accepts that both qualitative and quantitative approaches are necessary to understand complex phenomena such as sustainability adoption. Pragmatism aligns with applied research in emerging industries and allows the researcher to capture both numerical patterns (adoption rates, percentages) and contextual insights (drivers, barriers).

3.2 Research Approach

- A mixed-method approach was used, incorporating both descriptive and exploratory elements.
- The descriptive component focused on identifying existing green supply chain practices among shrimp aquaculture firms.
- The exploratory component analyzed the underlying drivers and barriers influencing adoption.
- This approach ensured that the study captured not only “what” practices are adopted but also “why” adoption varies across firms.

3.3 Research Strategy

A multiple-case study strategy was used, where each shrimp export firm was treated as a separate case. This strategy is appropriate for understanding variations in adoption and contextual constraints across firms of different scales.

3.4 Research Context

The study was conducted among shrimp export firms operating under Sri Lanka’s aquaculture sector. The firms are registered under the National Aquaculture Development Authority (NAQDA) and collectively contribute significantly to the country’s seafood export revenue. The industry is characterized by High energy dependence, Environmental compliance requirements, international market exposure and variations in scale and technology. This context makes it particularly suitable for studying GSCM adoption.

3.5 Population and Sample Selection

According to NAQDA records (2023), Sri Lanka has approximately 10 registered shrimp export-oriented companies. Using a purposive sampling method based on accessibility and willingness to participate, nine (n=9) firms representing small, medium, and large exporters were selected. This sample is adequate for exploratory research and aligns with Krejcie and Morgan (1970) guidelines for small populations.

3.6 Data Collection Methods

Data for the study were collected using both primary and secondary sources to ensure accuracy, depth, and reliability. Primary data were gathered through structured questionnaires. To complement the primary data, secondary information was obtained from authoritative sources such as NAQDA aquaculture statistics, FAO reports on global aquaculture trends, Central Bank annual reports, individual farm production records, and environmental compliance documents. The use of both primary and secondary data enabled methodological triangulation, strengthening the validity and credibility of the study's findings.

3.7 Data Analysis Techniques

Data analysis was conducted using Microsoft Excel, employing:

- Descriptive statistics (percentages, frequencies)
- Comparative charts for adoption levels
- Thematic analysis for drivers and barriers

3. DATA ANALYSIS AND RESULTS

3.1 Adoption of Green Supply Chain Practices

Adoption rates for each GSCM practice were calculated from the nine firms surveyed. The results are summarized in Table 1.

Table 1: Adoption of Green Supply Chain Practices among Shrimp Export Firms (n = 9)

GSCM Practice	Number of Firms	Percentage (%)
Renewable Energy	7	78%
Wastewater Treatment	6	67%
Sustainable Feed	5	56%
Recyclable Packaging	2	22%

Source: Survey Data (2025)

Survey responses indicated that the most widely adopted GSCM practices were waste water treatment systems and renewable energy solutions (solar power, energy-efficient machinery). Several firms also reported using sustainable feed and recyclable packaging, though to a lesser extent.

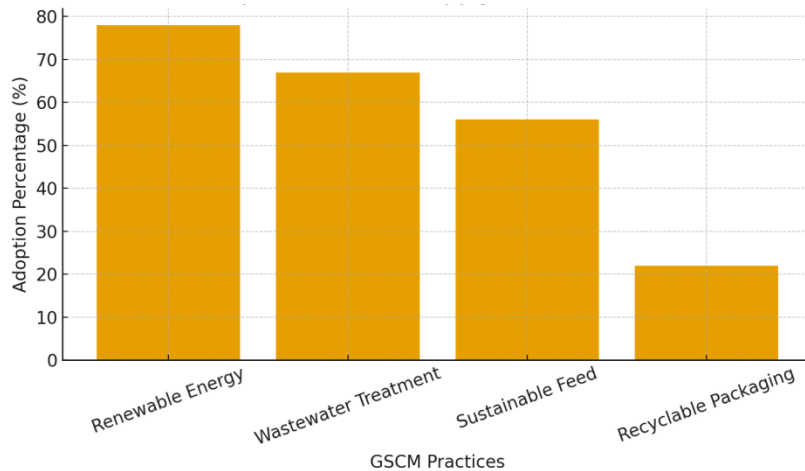


Figure1: Adoption of green supply chain practices

Table 1 summarizes the extent of adoption. Renewable energy emerged as the most widely implemented practice, with 7 out of 9 firms integrating solar or energy efficient technologies. Waste water treatment was the second most common, adopted by 6 firms. Five firm reported shifting to sustainable feed, while only two firms had adopted recyclable packaging. These results suggest that while energy and water-related practices are gaining ground, packaging sustainability remains underdeveloped.

3.2 Drivers of GSCM Adoption

The analysis revealed that the adoption of GSCM practices in shrimp aquaculture is driven by a combination of market, regulatory, environmental, and operational factors. Export market requirements play a major role, as firms supplying to EU and US buyers must meet strict sustainability expectations. Certification demands, particularly ASC and BAP standards, further motivate firms to adopt environmentally responsible practices to access premium markets. Environmental responsibility also influences adoption, with managers emphasizing the need to protect coastal ecosystems and minimize pollution. In addition, firms adopt green practices to strengthen reputation and remain competitive against global producers such as India and Vietnam. Although not the central focus of the study, long-term operational benefits such as reduced energy use, improved water efficiency, and fewer environmental penalties also encourage adoption. Overall, both external pressures and internal motivations contribute to firms' decisions to implement GSCM practices.

4.3 Barriers to GSCM Adoption

Despite growing interest in sustainable practices, several barriers continue to hinder the adoption of GSCM in Sri Lankan shrimp aquaculture. The most significant challenge is the high initial investment required for renewable energy systems, waste water treatment facilities, and other green technologies, which many small and medium-scale firms cannot afford. Limited technical expertise further restricts adoption, as producers often lack the skills to operate and maintain advanced environmental technologies. Inadequate infrastructure such as unreliable power supply and limited access to eco-friendly packaging materials also slows progress. Additionally, weak policy support, including insufficient government incentives, training, and monitoring, reduces motivation for firms to invest in sustainability. Market barriers also contribute, as not all buyers provide premium prices for sustainably produced shrimp, making firms reluctant to adopt costly environmental practices. Together, these constraints create financial, technical, and institutional difficulties that restrict widespread GSCM implementation.

4.4 Summary of Key Findings

- Adoption is highest in renewable energy (78%) and waste water treatment (67%).
- Adoption is moderate in sustainable feed (56%).
- Adoption is lowest in recyclable packaging (22%).
- Drivers are mainly export-market-based and certification-related.
- Barriers are mainly economic and technical.
- Adoption is partial and varies by firm size and resource capacity.

4. DISCUSSION OF FINDINGS

5.1 Comparison with Global Studies

5.1.1 Adoption Trends

The findings reveal that Sri Lankan shrimp export firms have adopted renewable energy (78%) and wastewater treatment (67%) at higher rates compared to sustainable feed (56%) and recyclable packaging (22%). This aligns with global trends reported in studies from Vietnam and Thailand, where renewable energy and wastewater treatment are also among the most widely implemented practices (Tran et al., 2020).

5.1.2 Drivers of Adoption

Export market pressure and certification requirements emerged as the most influential drivers. This supports the conclusions of Sarkis et al. (2011), who noted that firms in global supply chains are increasingly motivated by customer expectations and compliance norms. Similar to findings in India and Indonesia, Sri Lankan shrimp firms view green practices as a pathway to maintain market access and enhance global competitiveness.

5.1.3 Barriers to Adoption

Economic and technical barriers are consistent with international evidence. High initial investment and lack of technical expertise represent major challenges in Sri Lanka, similar to findings from aquaculture sectors in Vietnam, Bangladesh, and Ecuador. Sri Lanka's weak policy incentives resemble challenges observed in other emerging economies where environmental regulations exist but financial and institutional support remain inadequate.

5.2 Implications for Sri Lanka's Shrimp Aquaculture

1. Partial Adoption Shows Potential for Growth

The moderate but uneven adoption of GSCM practices suggests that Sri Lanka has begun transitioning toward sustainable aquaculture but requires increased institutional support to scale adoption.

2. Export Competitiveness Relies on Sustainability

As global seafood markets shift toward environmentally certified products, Sri Lanka's ability to expand its market share will depend on meeting international sustainability standards.

3. Technology and Skills Gaps Are Major Constraints

The lack of trained personnel in renewable energy and waste water management slows adoption and increases operational risks. Addressing these gaps is essential for industry-wide sustainability.

4. Policy Support Remains Insufficient

Compared to countries such as Vietnam and Norway, Sri Lanka offers limited incentives for green aquaculture investments. Without targeted subsidies or low-interest loans, many small and medium enterprises will struggle to adopt green technologies.

5.3 Linking Findings to Theoretical Perspectives

5.3.1 Institutional Theory

The strong influence of export markets and certification bodies supports the argument that firms respond to external institutional pressures. Sri Lankan shrimp exporters adopt green practices largely due to customer expectations and regulatory compliance demands.

5.3.2 Resource-Based View (RBV)

Firms that invest in renewable energy and efficient waste water treatment systems gain unique capabilities that enhance long-term

competitiveness. Your findings demonstrate that these green practices serve as strategic assets, consistent with RBV.

6. CONCLUSION AND CONTRIBUTIONS

6.1 Conclusion

This study examined the adoption of Green Supply Chain Management (GSCM) practices among nine export-oriented shrimp aquaculture firms in Sri Lanka and identified the key drivers and barriers influencing adoption.

The findings show that:

- Renewable energy and wastewater treatment are the most widely adopted practices.
- Sustainable feed and recyclable packaging show lower adoption.
- Export market demands, certification standards, environmental responsibility, and brand reputation act as strong drivers.

High investment costs limited technical expertise, inadequate infrastructure, and weak policy support are major barriers. Overall, the adoption of GSCM practices is progressing but remains uneven across firms. Strengthening technical, financial, and policy support is essential for accelerating the sector's transition toward sustainable and globally competitive aquaculture.

6.2 Theoretical Contributions

The study contributes to the literature by:

- Extending GSCM research into an underexplored context—Sri Lankan shrimp aquaculture.
- Developing a practical driver–barrier framework using real industry data.
- Providing empirical evidence that sustainability adoption is influenced more by export-driven institutional pressures than internal drivers.

6.3 Contextual Contributions

This is one of the few studies analyzing GSCM adoption in the Sri Lankan aquaculture sector. It offers:

- Real-world insights into sustainability transitions in emerging markets.
- Benchmark adoption data for policymakers and industry leaders.
- Evidence-based recommendations for improving environmental performance.

6.4 Methodological Contributions

The study's mixed-method approach combining descriptive data with thematic interpretation helps future researchers replicate or expand the work, especially in contexts with small populations and uneven adoption patterns.

6.5 Practical Implications

For Industry:

- Invest in renewable energy where possible, as it delivers long-term savings and environmental benefits.
- Implement more advanced waste water treatment systems to meet export standards.
- Gradually adopt sustainable feed and packaging as technology becomes more affordable.

For Policymakers:

- Provide targeted subsidies or low-interest loans for green technology adoption.
- Strengthen local infrastructure to support green aquaculture (e.g., solar access, packaging materials).
- Offer national training programs to improve technical capacity within the sector.

REFERENCE

Ashoka, A., Jayasooriya, S. D., & Galahitiyawe, N. W.K. (2023). Awareness of green supply chain management practices of Sri

Lankan SMEs. ICBR Conference Proceedings.
<https://doi.org/10.31705/ICBR.2023.22>

Chandrasiri, D. W. S. S. (2025). Environmental sustainability of the agro-food industry through strategic green supply chain management. *Sri Lanka Journal of Development Administration*, 7(1), 93–114. <https://doi.org/10.4038/sljda.v7i1.7153>

Chandrasiri, P. H. B. T., & Amarasena, T. S. M. (2024). Green supply chain management practices for sustainable performance of export manufacturing companies in Western Province, Sri Lanka. *Journal of Purchasing, Logistics and Supply Chain Management System*, 5(1), 16–31.

FAO. (2020). *The state of world fisheries and aquaculture*. Food and Agriculture Organization of the United Nations.

Juliza Hidayati, & Sawarni Hasibuan. (2019). Performance improvement of shrimp feed raw materials in green supply chain. In *Proceedings of the International Conference on Industrial Engineering and Operations Management (IEOM 2019)*.

NAQDA. (2023). *Annual statistics report: Shrimp aquaculture sector*. National Aquaculture Development Authority of Sri Lanka.

Santini, S. C., & Simatupang, T. (2024). Excelling green supply chain management practices through maturity model: A case study of Fish 96 Company. *Asian Journal of Social and Humanities*, 3(1). <https://doi.org/10.59888/ajosh.v3i1.442>

Sarkis, J., Zhu, Q., & Lai, K. H. (2011). An organizational theoretic review of green supply chain management literature. *International Journal of Production Economics*, 130(1), 1–15.

Soft Computing. (2021). Shrimp closed-loop supply chain network design. *Soft Computing*. <https://doi.org/10.1007/s00500-021-05698-1>

The socio-ecological resilience and sustainability implications of seafood supply chain disruption. (2023). *Reviews in Fish Biology and Fisheries*, 33(4), 1129–1154. <https://doi.org/10.1007/s11160-023-09788-1>

Tran, N. H., Pham, T. M., & Nguyen, V. T. (2020). Green supply chain management in aquaculture: Practices and implications. *Marine Policy*, 118, 103965.

**THE IMPACT OF ECO-FRIENDLY PACKAGING ON SUSTAINABLE
PURCHASE INTENTION OF YOUNG CONSUMERS IN NORTH
WESTERN PROVINCE, SRI LANKA**

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ABSTRACT

This study examines the influence of eco-friendly packaging on the sustainable purchase intention of young consumers in Sri Lanka, focusing on the North Western Province. The increasing threats of environmental pollution, climate change, and unsustainable consumption have heightened the global emphasis on green purchasing behaviours. Packaging waste contributes significantly to environmental degradation, prompting governments and businesses to adopt sustainable alternatives. The study investigates four major determinants as perceived environmental benefits, perceived quality, eco-friendly awareness, and convenience to identify how they shape young consumers' sustainable purchase intention. A positivist philosophical stance and deductive approach guided the research. Quantitative methods were employed, and data were collected from a sample of 384 young consumers aged 15–29 using a validated structured questionnaire. Statistical techniques including descriptive analysis, correlation analysis, and regression modelling were applied using SPSS. Results reveal that all four independent variables significantly impact sustainable purchase intention, with eco-friendly awareness and perceived environmental benefits registering the

strongest effects. The findings highlighted that young consumers are increasingly driven by environmental values, product safety, and functional attributes when engaging in sustainable purchasing. The study contributes theoretically by contextualizing behavioural theories such as the Theory of Planned Behaviour in a developing-country setting, while practically offering insights for policymakers, educators, and manufacturers seeking to promote eco-friendly consumer behaviour.

Keywords: Awareness, Convenience, Eco-friendly Packaging, Perceived Quality, Sustainable Purchase Intention

1. INTRODUCTION

1.1 Background of the Study

Environmental responsibility has become a central concern in global discussions as the world faces escalating threats due to climate change, pollution, and waste mismanagement. Among the major contributors to environmental harm is packaging waste, particularly single-use plastics, which accounts for a significant proportion of global solid waste. As consumers become more aware of environmental degradation, their purchasing decisions increasingly reflect an inclination toward sustainable and eco-friendly products. (Cheng Pan, 2021) Consequently, eco-friendly packaging has emerged as a key area of interest among marketers, environmentalists, and policymakers seeking to encourage sustainable consumption patterns.

In Sri Lanka, environmental concerns have intensified due to the rise of plastic pollution, improper waste disposal, and limited recycling infrastructure. Despite numerous government-led initiatives such as bans on polythene and campaigns promoting recycling consumer behavior change remains slow. The increasing need to promote environmentally conscious behavior among youth, who represent a significant portion of the population and serve as future change agents, is evident (Munasinghe P.M., 2021).

1.2 Research Problem

Although environmental awareness has grown among Sri Lankan consumers, the actual adoption of eco-friendly products, particularly sustainable packaging, remains relatively low. (Munasinghe P.M., 2021) Studies reveal an attitude–behavior gap in which consumers express support for environmentally friendly products but fail to reflect these attitudes in their purchasing decisions. Youth often demonstrate emotional concern for the environment, yet factors such as price sensitivity, convenience, product quality, and limited accessibility influence their behavior. (G Akehurst, 2012) Therefore, the identified gap is the lack of research focusing specifically on the eco-friendly packaging behavior of young consumers in the semi-urban North Western province. Addressing this gap is essential to understand how packaging attributes influence sustainable purchase intention. Thus, the research problem can be articulated as:

“What is the influence of eco-friendly packaging on the sustainable purchase intention of young consumers in the North Western Province of Sri Lanka?”

1.3 Research Objectives

- To evaluate the impact of perceived environmental benefits on the sustainable purchase intention of young consumers.
- To evaluate the impact of perceived quality of eco-friendly packaging on the sustainable purchase intention of young consumers.
- To evaluate the impact of eco-friendly awareness on the sustainable purchase intention of young consumers.
- To evaluate the impact of the convenience of eco-friendly packaging on the purchasing decisions of young consumers.

1.4 Significance of the Study

This study is significant theoretically and practically. From a theoretical perspective, it adds to the literature on sustainable consumption and green marketing, particularly in developing countries. By assessing eco-friendly packaging attributes, it extends the Theory of Planned Behavior and Value–Belief–Norm Theory to a

new demographic and cultural context. From a practical standpoint, the results will help marketers design effective packaging strategies and will inform policymakers and educators on how to promote sustainable behavior among youth. The findings offer insights for industries adopting green strategies and serve as a reference for future research.

2. LITERATURE REVIEW

Sustainable consumption has become an essential focus within global environmental research, emphasizing the responsible use of resources to minimize ecological harm while fulfilling present needs without compromising the well-being of future generations. As environmental concerns intensify, eco-friendly packaging has gained significant importance due to its potential to reduce waste, lower carbon emissions, and mitigate pollution. (Wang H, 2019) Consequently, researchers and policymakers view sustainable packaging practices as a vital component of broader environmental conservation efforts.

To understand the behavioral mechanisms driving sustainable consumption, several theoretical frameworks have been applied. One of the most influential is the Theory of Planned Behavior (TPB) introduced by (Ajzen, 1991). According to TPB, behavioral intention is shaped by attitudes toward the behavior, subjective norms, and perceived behavioral control. Within the context of eco-friendly packaging, consumers' attitudes are influenced by their environmental beliefs, while social norms encourage responsible purchasing practices.

Another critical theoretical lens is the Value-Belief-Norm (VBN) Theory proposed by Stern (2000). VBN suggests that individuals' personal values shape their environmental beliefs, which in turn establish moral norms that motivate eco-conscious behavior. When consumers highly value environmental protection, they develop a sense of obligation that compels them to engage in sustainable purchasing, including the selection of products with eco-friendly packaging. This theory is particularly relevant for understanding the motivations of younger consumers whose value systems are often shaped by global sustainability movements.

2.1 Perceived environmental benefits

Perceived environmental benefits refer to consumers' belief that eco-friendly packaging contributes to reducing pollution, conserving resources, and minimizing ecological damage. Studies show that stronger perceptions of environmental benefits lead to higher support for green products. (G Prakash, 2017)

2.2 Perceived Quality

Perceived quality involves consumers' evaluation of the durability, usefulness, and overall performance of eco-friendly packaging. Consumers may avoid sustainable options if they feel the packaging is weak or inferior. Ensuring quality is essential because consumers expect eco-friendly packaging to match or exceed conventional alternatives. (Branca G, 2023)

2.3 Convenience

Even though consumers are environmentally conscious and their perception of quality is in alignment with their acceptance of green product attributes, product convenience can be a significant barrier to acceptance. In this context, convenience captures the user-friendliness of sourcing, using, and disposing of an eco-friendly packaged product. (Niinimaki, 2010) has noted that many people resist sustainable options not because they do not care but because they find such options impractical in their daily lives.

2.4 Eco-Friendly Awareness

Eco-friendly awareness is the consumer's knowledge of environmental issues and understanding of sustainable packaging choices. Higher awareness is strongly linked with green purchasing behavior. In the Sri Lankan context, awareness plays a major role due to varying levels of environmental education. (Munasinghe P.M., 2021)

Despite growing interest in sustainable consumption, several gaps remain in the existing literature. Research on eco-friendly packaging within Sri Lanka, particularly in semi-urban contexts such as the North Western Province, is limited. Youth purchasing behavior in

relation to sustainable packaging also remains underexplored, even though young consumers are often the most environmentally conscious demographic group. Additionally, few studies integrate environmental, functional, and cognitive attributes of packaging into a single framework, indicating the need for more holistic research approaches.

3. METHODOLOGY

This study was grounded in a positivist research philosophy, which emphasizes the use of objective and quantifiable evidence to understand social phenomena. Positivism aligns with the study's aim of measuring relationships between eco-friendly packaging attributes and sustainable purchase intention through statistical analysis.

A deductive research approach was adopted, allowing the researcher to develop hypotheses based on existing theories and test them through empirical data. The research employed a quantitative design and followed a cross-sectional survey method, enabling data collection from a large group of respondents at a single point in time. The study population consisted of young consumers aged 15 to 29 residing in the North Western Province. Based on estimates derived from the Department of Census and Statistics Sri Lanka (2021) population age distribution, the youth population (15–29 years) in the North Western Province exceeds 550,000 individuals approximately. Guided by Krejcie and Morgan's (1970) sample size table, a sample of 384 respondents was selected. Convenience sampling was applied due to its practicality and ability to quickly access the target demographic. Primary data were collected using a structured questionnaire consisting of closed-ended items measured on a five-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree (Sekaran U, 2016). The questionnaire measured five constructs, perceived environmental benefits, perceived quality, eco-friendly awareness, convenience, and sustainable purchase intention using three items each adapted from established studies, with minor contextual modifications to suit the Sri Lankan setting while preserving theoretical validity. This instrument was designed to capture respondents' perceptions regarding perceived environmental benefits, perceived quality, eco-friendly awareness, convenience, and

sustainable purchase intention. Accordingly, the conceptual framework of the study is developed as follows.

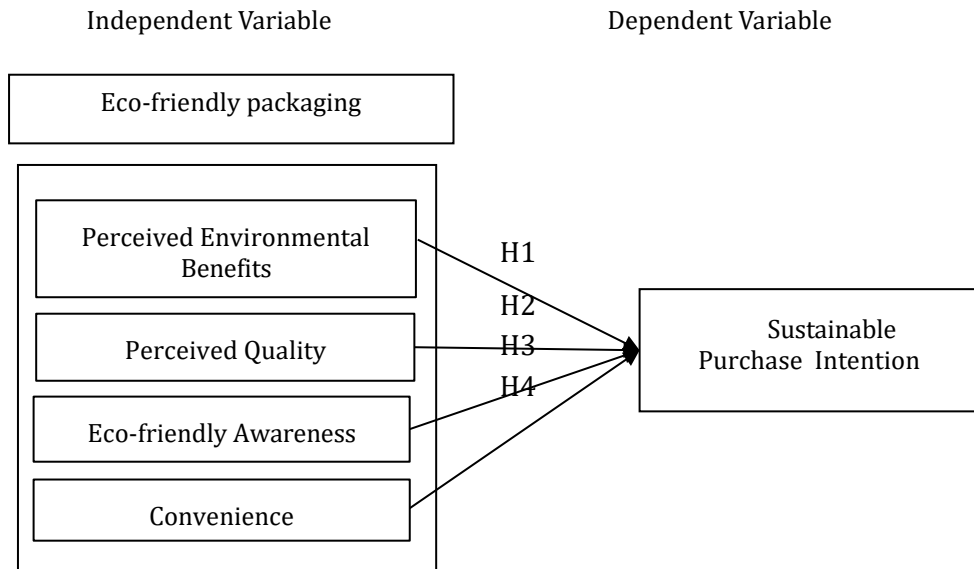


Figure 1: Conceptual Framework

Accordingly, research hypothesis has been built as follows.

H1: There is a positive impact of the perceived environmental benefits of eco-friendly packaging on sustainable purchase intention among young consumers in North Western Province.

H2: There is a positive impact of perceived quality of eco-friendly packaging on sustainable purchase intention among young consumers in North Western Province.

H3: There is a positive impact of eco-friendly awareness on sustainable purchase intention among young consumers in North Western Province.

H4: There is a positive impact of convenience on sustainable purchase intention among young consumers in North Western Province.

Data analysis was conducted using SPSS software. The analysis procedure included descriptive statistics to summarize respondent characteristics, reliability testing to evaluate internal consistency of constructs, correlation analysis to examine relationships among

variables, and multiple regression analysis to determine the strength and significance of the predictors of sustainable purchase intention.

4. DATA ANALYSIS AND RESULTS

The data collected from 384 young consumers in the North Western Province was first subjected to a thorough screening process to ensure accuracy, consistency, and completeness. The dataset was examined for missing values, duplicates, and outliers. No significant omissions or abnormalities were detected, confirming its suitability for statistical analysis. Following data validation, the analysis proceeded in line with the study's quantitative, positivist methodological approach.

Descriptive statistics were used to summarize demographic variables such as age, gender, education, occupation, and income. The demographic profile revealed a diverse and balanced sample, with respondents distributed almost equally across gender and income groups. This diversity enhances the external validity of the findings and supports meaningful interpretation across subgroups

Reliability analysis demonstrated strong internal consistency, with Cronbach's Alpha values exceeding the acceptable threshold of 0.70 for all constructs. (Table 1) These results confirmed that the items effectively measured perceived environmental benefits, perceived quality, eco-friendly awareness, convenience, and sustainable purchase intention.

Inferential analysis was performed using correlation and multiple regression techniques, aligning with the study objectives. Correlation analysis revealed statistically significant positive relationships between all independent variables and sustainable purchase intention. Perceived environmental benefits showed the strongest correlation with purchase intention ($r = 0.582$, $p < 0.01$), indicating that when youth perceive packaging as beneficial to the environment, their likelihood of purchasing increases considerably. Eco-friendly awareness also demonstrated a moderate-to-strong relationship ($r = 0.537$, $p < 0.01$), highlighting the influence of knowledge and environmental consciousness on purchasing behaviour. Perceived

quality ($r = 0.462, p < 0.01$) and convenience ($r = 0.488, p < 0.01$) also correlated significantly with purchase intention, confirming their relevance though with relatively weaker influence.

Multiple regression analysis further validated these findings. The model recorded an R value of 0.612 and R^2 of 0.375, indicating that 37.5% of the variance in sustainable purchase intention is explained collectively by the four predictors.

ANOVA results ($F = 47.35, p < 0.000$) confirmed the statistical significance of the model, demonstrating that perceived environmental benefits, perceived quality, awareness, and convenience significantly predict sustainable purchase intention among young consumers in North Western Province.

Perceived Environmental Benefits is the strongest predictor ($B = 0.294, \text{Beta} = 0.356$) ($p = 0.000$), indicating that when consumers recognize clear environmental advantages, their intention to purchase increases the most. Eco-Friendly Awareness is the second strongest factor ($B = 0.257, \text{Beta} = 0.298$) ($p = 0.000$), showing that greater environmental knowledge significantly boosts sustainable purchase behavior.

Perceived Quality also has a meaningful effect ($B = 0.188, \text{Beta} = 0.211$) ($p = 0.000$), suggesting that consumers are more likely to choose eco-friendly packaging when they believe it maintains strong performance and durability. Convenience, while the weakest predictor, remains significant ($B = 0.171, \text{Beta} = 0.203$) ($p = 0.000$), implying that ease of use, disposal, and accessibility still influence purchase decisions but to a lesser extent.

5. DISCUSSION OF FINDINGS

This study examined the factors influencing sustainable purchase intention of eco-friendly packaging among young consumers in the North Western Province of Sri Lanka. The findings provide strong empirical support for the proposed hypotheses and align closely with existing literature and theoretical frameworks on sustainable consumer behavior.

H1: There is a positive impact of the perceived environmental benefits of eco-friendly packaging on sustainable purchase intention among young consumers in North Western Province

The analysis confirms a significant positive impact of perceived environmental benefits on sustainable purchase intention ($r = 0.582$), supporting Hypotheses 1. This indicates that young consumers are more likely to purchase eco-friendly packaging when they perceive clear environmental advantages. These results are consistent with prior studies as well which highlighted environmental concern as a key driver of green consumer behavior. (Cheng Pan, 2021) In the North Western Province context, this suggests that environmental values play a central role in youth decision-making, reinforcing the importance of communicating the ecological benefits of products to foster sustainable consumption.

H2: There is a positive impact of perceived quality of eco-friendly packaging on sustainable purchase intention among young consumers in North Western Province.

Perceived quality also demonstrated a significant positive relationship with sustainable purchase intention ($r = 0.462$), confirming Hypothesis 2. This confirms prior research findings that consumers are reluctant to adopt green alternatives if product quality is perceived as inferior. The findings suggest that while environmental concern motivates youth, it does not fully override considerations of durability, safety, and functionality. In practical terms, this emphasizes the need for eco-friendly packaging to meet quality expectations, particularly in developing regions where skepticism about green products may persist.

H3: There is a positive impact of eco-friendly awareness on sustainable purchase intention among young consumers in North Western Province.

Eco-friendly awareness emerged as the second most influential predictor, supporting Hypothesis 3 that there is a positive impact of eco-friendly awareness on sustainable purchase intention among young consumers in North Western Province. Young consumers with higher levels of environmental knowledge and exposure to sustainability issues were more likely to engage in eco-friendly

purchasing. The findings are also consistent with the Value-Belief-Norm (VBN) theory, which posits that knowledge and moral obligations significantly shape pro-environmental behavior.

H4: There is a positive impact of convenience on sustainable purchase intention among young consumers in North Western Province.

Convenience was also a significant predictor, supporting Hypothesis 4. This suggests that while young consumers prioritize environmental and quality considerations, practical factors such as product availability, ease of handling, and disposal remain relevant. This aligns with prior studies showing that convenience can be a barrier to adopting eco-friendly alternatives, especially in regions with limited recycling and waste management infrastructure. In the North Western Province, improving accessibility and convenience could enhance the adoption of sustainable packaging.

6. CONCLUSION AND CONTRIBUTIONS

In conclusion study examined how eco-friendly packaging influences the sustainable purchase intention of young consumers in the North Western Province of Sri Lanka. The analysis confirmed that all four investigated factors, perceived environmental benefits, perceived quality, eco-friendly awareness, and convenience significantly predict sustainable purchase intention. Among these, perceived environmental benefits and eco-friendly awareness emerged as the strongest determinants, indicating that young consumers are highly motivated by their understanding of environmental issues and the perceived positive impact of sustainable packaging. Perceived quality also played an important role, demonstrating that consumers expect eco-friendly packaging to meet functional and aesthetic standards comparable to, or better than, conventional packaging. Although convenience had the weaker effect, it remained statistically significant, suggesting that practical considerations such as ease of use, disposal, and accessibility still influence purchasing behavior. Overall, the findings highlight that sustainable purchasing decisions among youth are shaped by a combination of environmental motivations and practical product attributes.

The study makes several noteworthy contributions. It adds to the literature by examining a combination of environmental, functional, and cognitive factors influencing purchase intention which is an approach less commonly applied in Sri Lankan research. Contextually, the study fills a significant gap by focusing on youth in the North Western Province, a demographic and geographical area that has received little attention in sustainability research despite its growing environmental concerns.

Practically, the findings provide valuable insights for marketers, policymakers, and product developers. Businesses are encouraged to emphasize the environmental benefits and quality of their packaging, while policymakers can use the results to design targeted awareness programs and strengthen eco-friendly infrastructure. Collectively, these contributions support the ongoing national and global movement toward sustainable consumption and highlight the essential role of young consumers in driving environmentally responsible purchasing behavior.

For future research, studies could expand to include older age groups, rural populations, or other regions to explore demographic differences. Longitudinal research could track changes in sustainable behavior over time, while investigations of additional factors such as social influence, price sensitivity, or brand trust could provide a fuller understanding of consumer decisions. Finally, examining actual purchasing behavior and conducting cross-cultural comparisons would help assess the generalizability of the findings and whether intentions translate into sustainable actions.

REFERENCES

- Ajzen, I. (1991). The Theory of Planned Behavior. *ORGANIZATIONAL BEHAVIOR AND HUMAN DECISION PROCESSES*, 179-211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Branca G, R. R. (2023). Sustainable packaging design and the consumer perspective: a systematic literature review. *Italian Journal of Marketing*, 2024, 77-111.

<https://doi.org/https://doi.org/10.1007/s43039-023-00084-1>

- Cheng Pan, Y. L. (2021). The influence of green packaging on consumers' green purchase intention in the context of online-to-offline commerce. *Journal of Systems and Information Technology*, 23(2), 133-153. <https://doi.org/https://doi.org/10.1108/JSIT-11-2019-0242>
- G Akehurst, C. A. (2012). Re-examining green purchase behaviour and the green consumer profile: new evidences. *Management Decision*, 50(5), 972-988. <https://doi.org/https://doi.org/10.1108/00251741211227726>
- G Prakash, P. P. (2017). Intention to buy eco-friendly packaged products among young consumers of India: A study on developing nation. *Journal of Cleaner Production*, 141, 385-393. <https://doi.org/https://doi.org/10.1016/j.jclepro.2016.09.116>
- Munasinghe P.M., S. A. (2021). Factors influencing the Purchase Intention of Green Packaging among Millennials in Gampaha District of Sri Lanka. *Sri Lanka Journal of Marketing*. <https://doi.org/https://doi.org/10.4038/sljmuok.v7i1.59>
- Niinimäki, K. (2010). Eco-Clothing, Consumer Identity and Ideology. *Sustainable Development*, 140 - 162.
- Sekaran U, B. R. (2016). *Research Methods For Business: John Wiley & Sons*. John Wiley & Sons.
- Wang H, M. B. (2019). How Does Green Product Knowledge Effectively Promote Green Purchase Intention? *Sustainability*, 11(4). <https://doi.org/https://doi.org/10.3390/su11041193>
- Zhuang W, L. X. (2021). On the Factors Influencing Green Purchase Intention: A Meta-Analysis Approach. *Frontiers in Psychology*, 12. <https://doi.org/https://doi.org/10.3389/fpsyg.2021.644020>

Table 1: Reliability Statistics

Variable	Cronbach's Alpha	N of Items
Perceived Environmental Benefits	0.803	5
Perceived Quality	0.726	5
Eco-friendly Awareness	0.798	5
Convenience	0.751	5
Sustainable Purchase Intension	0.762	5

Table 2: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Perceived Environmental Benefits	384	2.0	5.00	4.343	0.60391
Perceived Quality	384	2.0	5.00	4.384	0.51347
Eco-friendly Awareness	384	2.0	5.00	4.296	0.60164
Convenience	384	2.0	5.00	4.333	0.55425
Sustainable Purchase Intension	384	2.0	5.00	4.328	0.55494
Valid N (listwise)	384				

Table 3: Correlation between Perceived Environmental Benefits (PEB) and Sustainable Purchase Intension (SPI)

		Perceived Environmental Benefits	Sustainable Purchase Intension
Perceived Environmental Benefits	Pearson Correlation	1	.582**
	Sig. (2-tailed)		.000
	N	384	384
Sustainable Purchase Intension	Pearson Correlation	.582**	1
	Sig. (2-tailed)	.000	
	N	384	384
**. Correlation is significant at the 0.01 level (2-tailed).			

Table 4: Correlation between Perceived Quality (PQ) and Sustainable Purchase Intention (SPI)

Correlations			
		Perceived Quality	Sustainable Purchase Intension
Perceived Quality	Pearson Correlation	1	.462**
	Sig. (2-tailed)		.000
	N	384	384
Sustainable Purchase Intension	Pearson Correlation	.462**	1
	Sig. (2-tailed)	.000	
	N	384	384
**. Correlation is significant at the 0.01 level (2-tailed).			

Table 5: Correlation between Eco-Friendly Awareness (EFA) and Sustainable Purchase Intention (SPI)

Correlations			
		Eco-friendly Awareness	Sustainable Purchase Intension
Eco-friendly Awareness	Pearson Correlation	1	.537**
	Sig. (2-tailed)		.000
	N	384	384
Sustainable Purchase Intension	Pearson Correlation	.537**	1
	Sig. (2-tailed)	.000	
	N	384	384
**. Correlation is significant at the 0.01 level (2-tailed).			

Table 6: Correlation between Convenience (C) and Sustainable Purchase Intention (SPI)

Correlations			
		Convenience	Sustainable Purchase Intention
Convenience	Pearson Correlation	1	.488**
	Sig. (2-tailed)		.000
	N	384	384
Sustainable Purchase Intention	Pearson Correlation	.488**	1
	Sig. (2-tailed)	.000	
	N	384	384
**. Correlation is significant at the 0.01 level (2-tailed).			

Table 7: Correlation (summarized)

	Pearson Correlation	Sig. (2-tailed)
Perceived Environmental Benefits	.582	0.000
Perceived Quality	0.462	0.000
Eco-friendly Awareness	0.537	0.000
Convenience	0.488	0.000

Table 8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Sig. F Change
1	0.612 ^a	0.375	0.362	0.19845	0.000

Table 9: ANOVA

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	32.145	4	8.036	47.35	.000 ^b
	Residual	38.055	379	.101		
	Total	70.200	383			
a. Dependent Variable: Sustainable Purchase Intension						
b. Predictors: (Constant), Perceived Environmental Benefits, Perceived Quality, Eco-friendly Awareness, Convenience						

Table 10: Coefficients Table

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.812	0.118	-	6.88	0.000
	Perceived Environmental Benefits	0.294	0.046	0.356	6.39	0.000
	Perceived Quality	0.188	0.049	0.211	3.84	0.000
	Eco-Friendly Awareness	0.257	0.052	0.298	4.94	0.000
	Convenience	0.171	0.048	0.203	3.56	0.000
a. Dependent Variable: Sustainable Purchase Intension						

IMPACT OF RESPONSIVE SUPPLY CHAIN ON CUSTOMER LOYALTY IN RETAIL INDUSTRY: SPECIAL REFERENCE TO SUPERMARKETS IN WESTERN PROVINCE

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ABSTRACT

A responsive supply chain focuses on enhancing market responsiveness to deliver greater value to consumers, thereby fostering customer loyalty. Customer loyalty built on trust between a business and its customers, resulting in mutual benefits. This article distinguishes between theoretical and practical concepts of responsive supply chain management (SCM), providing an overview of customer loyalty in the retail industry, customer satisfaction, switching effects, and the relationship between customer loyalty and responsive supply chain networks in a retail setting. The study examines how elements like agility, flexibility, logistic capability, and lead time influence customer loyalty, with a specific focus on supermarkets in the western province. The study adopts a descriptive research design and the effect of responsive supply chain on customer loyalty was analyzed through structured questionnaires. A sample of 100 customers was selected through convenient sampling, with 100 respondents from the western province participating in the survey. Findings reveal that logistic capability and lead time significantly affect customer loyalty, confirming the hypotheses. The finding of this study will contribute to the understanding of factors affecting retaining customer loyalty through having a responsive supply chain and fulfill the gap in factors that influence the western province

supermarkets to find reasons for customer movements to other groceries. Agility and flexibility of the responsive supply chain are found to have a relationship with customer loyalty, though they do not significantly impact it. The results are conclusive, revealing that all four variables have a relationship with customer loyalty in the retail industry, but only two of them significantly impact customer loyalty.

Keywords: *Agility, Customers Loyalty, Flexibility, Lead Time, Responsive supply chain,*

1. INTRODUCTION

Sri Lanka is presently grappling with an economic crisis, prompting the general people are focusing to prioritize meeting their basic daily needs. This situation has led to a population of discerning consumers who are conscious of the necessity to reduce expenses and seek out better deals. Consequently, there is a likelihood that their satisfaction and trust levels may diminish, potentially prompting them to consider severing ties with their current supermarkets. (Filipe et al. 2017). The economic crisis is exerting both direct and indirect impacts across all sectors, compelling organizations to seek solutions and forge ahead. Notably, supermarkets emerge as one of the hardest-hit sectors. Consequently, affected companies have struggled to meet customer demands without experiencing shortages of goods on their shelves. Predominantly, the majority of supermarkets are concentrated in the western province, strategically positioning their branches amidst intense competition (Liyanage et al., 2020).

A responsive supply chain encapsulates the collective efforts of stakeholders, partners, and a commitment to customer satisfaction. Emphasizing responsiveness as a primary objective within the extended supply chain community can provide valuable guidance for logistics operations and buyer-sourcing relationships. Responsiveness represents the ongoing adaptation and outcomes of organizational adjustments made by individual entities within a supply chain. These adjustments in behaviors, norms, and regulations aim to position the supply chain and its members favorably to deliver customer value amidst dynamic environmental conditions (Richey et al., 2022). The concept of supermarkets has become increasingly popular in Sri Lankan retailing due to their ability to provide all a

person's grocery needs under one roof, unlike traditional retail businesses. Consequently, this study aims to determine the influence of a wide selection and item availability (attributable to a responsive supply chain) on consumer loyalty.

The responsive supply chain (RSC) emphasizes innovative organizational structures aimed at delivering highly adaptable and cost-effective solutions for businesses. This approach enables facilities to swiftly adjust to changing market and consumer demands within a dynamic and competitive environment (Nurwin Fozia Rajab, 2016). Amid the ongoing economic crisis in Sri Lanka, shortages of daily-use items have emerged, partly due to fuel and other scarcities. This scenario highlights the supply chain's struggle to adapt to external factors. In the context of a responsive supply chain, the term refers to the probability of fulfilling a current order within a specified time frame. In situations with budget constraints, maximizing the responsive supply chain entails optimizing the likelihood of completing orders within the designated timeframe (Hum & Parlar, 2014). Measuring the responsive supply chain towards the internal and external factors and how it would affect customer loyalty is the main research area of this study.

The research aims to investigate the influence of a responsive supply chain on customer loyalty within the retail industry, with a particular focus on supermarkets in the western province. The objectives include analyzing the overall impact of a responsive supply chain on customer loyalty, as well as delving into specific components such as flexibility, lead time, agility, and logistic capability to determine their individual significance in shaping customer loyalty. By examining these factors comprehensively, the study seeks to provide insights into how the responsiveness of the supply chain affects customer loyalty and retention within the retail sector, particularly in the context of supermarkets in the western province. Customer loyalty refers to a strong and unwavering commitment to consistently purchase or repurchase a particular product or service. This commitment leads to continued patronage of the same brand or product, even in the face of external influences or marketing efforts that may attempt to sway consumer behavior towards alternatives (Commission, 2022).

In this study customer loyalty was used as a dependent variable. Increased supply chain integration will affect operational

performance, which in turn will impact consumer satisfaction and brand loyalty for the items produced. Considering this situation, supply chain integration is crucial for fostering customer happiness and loyalty (Zaid et al., 2021). Cognitive, emotive, conative, and action loyalty are the four stages of loyalty identified by (Polozov et al., 2016). According to theory, customers might initially show cognitive loyalty before showing emotional loyalty, conative loyalty, and lastly behavioral loyalty. The sections that follow give a quick overview of these periods. Some claim that consumer satisfaction both before and after a transaction lead to increased customer loyalty (Tenreng et al., 2019). Practices in supply chain management are seen as a tool to increase revenue, client pleasure, and ultimately, client loyalty. An additional review of prior research highlights the growing interest in measuring consumer loyalty to retail businesses through direct marketing initiatives like customer clubs and member card identification.

2. LITERATURE REVIEW

2.1 Responsive supply chain

A supply chain that can easily respond to challenges is strength for the business. The responsible supply chain must be responsive to customer needs, and it must be a supply chain that can easily respond to challenges is strength for the business. A responsive supply chain is defined as the ability of the supply chain to be timely, the degree to which it considers the shifting demands of consumers and responds to other changes in the dynamic business environment (Gunasekaran et al., 2008). As essential challenges in supply chain design and management, the responsive supply chain shifting market demands and their overall efficiency are now receiving a lot of attention in both the scientific community and in actual practice (Fisher & Fisher, n.d.). Another journal reviews responsive supply chain is defined as the ability of a company to adapt rapidly to any external changes that occur in the marketplace as well as to fulfill the needs of consumers effectively and efficiently (Swink et al., 2005). A responsive supply chain describes an organization's capacity to react quickly to any environmental changes that might have an impact on operations.

Empirical studies support the assertion that logistics process responsiveness has a direct and significant impact on customer development and retention, highlighting its operational and strategic importance (Asamoah et al., 2021). Specifically, responsive supply

chains are instrumental in enhancing customer loyalty by fulfilling consumer needs efficiently amidst market uncertainties (Swink et al., 2005). For instance, Kuo et al. (2020) emphasize that responsiveness defined as the capacity to adapt quickly to demand fluctuations and supply disruptions is crucial for maintaining competitive advantage in retail environments. In the context of supermarkets, responsiveness ensures product availability, timely replenishment, and reliable service, which collectively influence customer perceptions and loyalty (Zhao et al., 2021). Research by Wang and Zhang (2022) demonstrates that supermarkets with highly responsive supply chains tend to experience higher levels of customer satisfaction, which directly correlates with increased loyalty. Furthermore, responsiveness facilitates rapid adaptation to unforeseen challenges such as supply shortages or demand spikes, which are prevalent issues in retail sectors (Li & Wang, 2021; Chen et al., 2022).

2.2 Agility

In the literature, supply chain agility has mostly been examined with an emphasis on the concept's aspects. Being agile is essential since demand and supply change more quickly and widely than they used to in the majority of sectors. Different fields' definitions of agility involve a rapid response to nearby occurrences rather than rearranging structure and policy to effectively address expected or projected phenomena, defined above with a focus on responsiveness. Above definition grounded in the Responsiveness View. Managing the supply chain involves agility. As a result, several supply chain phrases may be mistaken for agile ones. Leanness is the phrase most often used interchangeably with agility. Leanness and agility should not be mistaken (Kosanke, 2019). A comprehensive conceptual approach to the role of logistics skills in attaining supply chain agility has not been taken (Gligor & Holcomb, 2012). This study examines how responsive supply chain agility effects on customer loyalty.

Supply chain agility being able to respond swiftly and effectively to market changes has garnered increased attention in recent literature. Choi and Hartley (2020) argue that agility encompasses not just speed but also flexibility in operations, which is vital for supermarkets to handle demand variability and supply uncertainties. Agile supply chains are characterized by rapid decision-making, flexible logistics, and adaptive inventory management, all contributing to superior customer service (Zhou & Lee, 2021). Research by Liu et al. (2022) demonstrates that agility enhances a retailer's ability to customize

offerings, reduce lead times, and improve responsiveness, ultimately reinforcing customer loyalty. In summary, agility acts as a mediator that amplifies the effects of responsiveness on customer satisfaction.

2.3 Flexibility

Flexibility In the context of retail, especially supermarkets, agility in replenishment and stock management can enhance customer satisfaction by minimizing stock outs and delays, thereby strengthening loyalty. Flexibility in the supply chain is crucial for an organization's performance because it allows the supply chain to better adapt to the demands of the market (Sinha et al., 2015). Flexibility in responsive supply networks refers to the capacity to respond to sudden changes in supply or demand as well as the ability to adapt to structural and strategic changes in the environment of the supply chain. So, agility and adaptability are combined into flexibility (Sajad Fayezi, 2016). Product flexibility, volume flexibility, new product flexibility, distribution flexibility, and responsiveness flexibility were the five dimensions of flexibility that were investigated in the previous empirical study. The findings imply that the furniture industry's primary reactions to environmental uncertainty are volume flexibility and launch flexibility (Haiming et al., 2009) . Finally, responsiveness flexibility refers to the capacity to adapt to the demands of the target market. Distribution flexibility refers to the capacity to make items widely accessible (Haiming et al., 2009).This study examines how responsive supply chain flexibility effects on customer loyalty.

2.4 Logistic Capability

Another piece of empirical data presents a thorough description of logistics skills that includes four areas and draws from the two earlier classification methods. These categories include customer focus, time management, integration, information sharing, and assessment. These competencies may also reflect resource knowledge in other functional domains like manufacturing, marketing, and purchasing," the researchers write. But when they are developed via actions related to the transit and storage of goods along the supply chain, they become essential logistical skills (Hofmann, 2010).

2.5 Lead Time

Supply chain lead time comes into play in the management of responsiveness at three different levels such as customer lead time,

manufacturing lead time, and supplier lead time (Etienne, 2016). When studying the past literature about the lead time and supply chain responsiveness, they review Supply Chain lead time is implemented in managing responsiveness at three different levels namely customer lead time, product lead time, and supplier lead time (Nilakantan, 2019). A supply chain network's lead time is the amount of time it takes to respond to client needs. For all pathways, they compare the lead time to the one that corresponds to the longest time. In addition, the worst-case lead time is the same as the response time in the absence of any inventory. In our prior study, we utilized this as a gauge of responsiveness (Haitham M. Alzoubi, 2022)

Despite the extensive literature on responsiveness, there remains a need for a more integrated, theory-driven understanding of how these dimensions collectively influence customer loyalty. Thus, this review aims to establish a conceptual framework linking responsiveness, agility, flexibility, logistics capability, and lead time to customer loyalty, supported by empirical evidence and theoretical reasoning.

3. METHODOLOGY

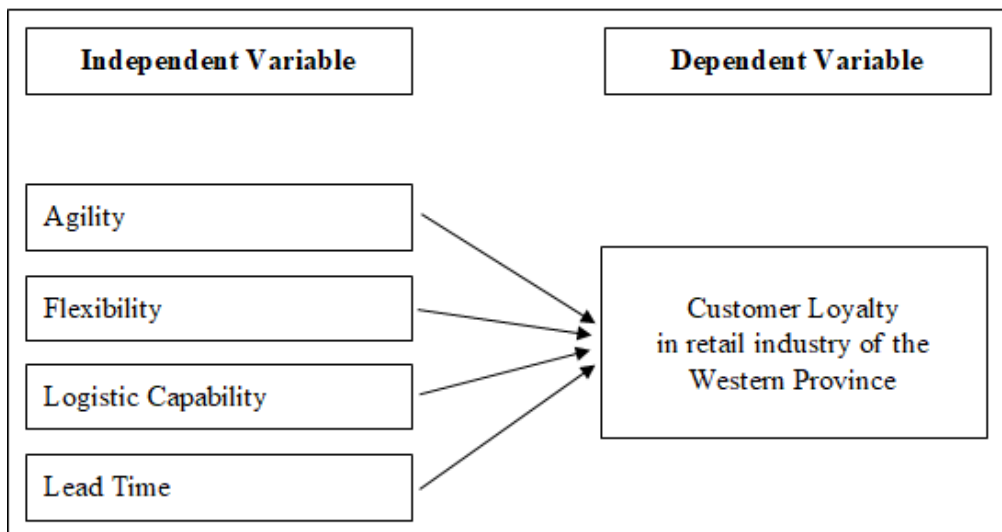


Figure 8: Conceptual framework

The researcher has selected customer loyalty as a dependent variable and responsive supply chain has been selected as an independent variable in supermarkets in western provinces. After reviewing more literature on responsive supply chain and customer loyalty and

researcher decided to measure supply chain responsiveness by using flexibility, Agility, lead time, and logistic capability. The conceptual framework depicted in **Error! Reference source not found.** serves as the basis for formulating hypotheses aimed at understanding the interplay between different elements within the supply chain and their influence on customer loyalty in supermarkets located in the Western Province.

H₀: There is a significant impact of responsive supply chain towards customer loyalty.

H₁: Agility in the supply chain has a significant impact on customer loyalty.

H₂: Flexibility of the supply chain has a significant impact on customer loyalty.

H₃: High logistic capability of the supply chain has significant impact on customer loyalty.

H₄: High lead time consuming of the supply chain has significant impact on customer loyalty.

3.1 Research methodology

Research methodology makes up the second layer of the onion created by Saunders et al. They divide research methodologies into deductive and inductive categories. Using the literature to find theories and hypotheses that the researcher will test with data is the main goal of the deductive approach. The inductive approach, by contrast, comprises collecting data and creating a hypothesis based on the results of data analysis. The deductive approach moves from the general to the specific. Researchers that study deductive reasoning typically begin with a theory before moving on to hypotheses or questions that are validated by data collecting. Deductive research is used to examine hypotheses, claims Sekaran (2003). Hypotheses that weren't initially formulated can be produced through the induction process. It also highlights the fact that after gathering the data, some original ideas may emerge. Based on these, new hypotheses may then be developed and put to the test.

Furthermore, research frequently uses both inductive and deductive methods to generate and test hypotheses (T. Sinha et al., 2018). The

data collection's findings either support or refute the theory. As a result, the study falls within the category of deductive research.

In this study, the researcher searched previous studies regarding the supply chain and customer loyalty and found the most suitable questions to measure the variables. Then physical data gathering was developed. Using the western province supermarkets, based on 3 districts (Colombo, Gampaha, Kaluthara), gather data from three supermarket channels by giving the same weight range. In quantitative research, data coding also comprises giving participant replies a number so that they may be put into a database (Fabiana Meijon Fadul, 2019). Thus, the quantitative research strategy has applied to this investigation. The population is customers who are living in the Western province. There are 5,851,130 population in Western province. All those people were the population of the study. The population consisted of three sub-demographical categories. There are three supermarket channels were drawn from three leading supermarkets with the largest market share, in the western province, Keells, Cargills, and Arpico (Liyanage et al., 2020). It has used to convenient sampling method.

Dependent and independent variables were measured using a five-point Likert scale, and questionnaires were used as instruments in the study to measure the variables. The reliability test, descriptive statistics test (means, standard deviations, and skewness), correlation test, and regression test were used to evaluate the data to establish links between variables, compare variables, detect differences between variables, and anticipate results.

Two steps of analysis were performed on the data. The main characteristics of the research variables and their patterns were initially determined using the descriptive statistics tests. The data were examined using the Statistical Package for Social Sciences (SPSS). The amount that the dependent variable varies in response to changes in the independent variables is another topic that is addressed by regression analysis. Regression analysis was performed in conjunction with Likert scale questions to get the means for all variables.

4. DATA ANALYSIS AND RESULTS

Results revealed about different relationships and impact among variables.

Table 7: City Constitution of the sample

		Population	Frequency
Valid	Colombo	2.45M	40.23
	Gampaha	2.42M	39.34
	Kaluthara	1.28M	20.81
	Total	6.15M	100

Source: Department of Census and Statics

Colombo District accounts for the largest share of the provincial population with approximately 2.45 million residents (40.23%), closely followed by Gampaha District with 2.42 million (39.34%). Kalutara District represents a comparatively smaller population of 1.28 million, contributing 20.81% to the total provincial population.

Table 8: The Reliability Analysis

Variable	No of items	Cronbach's Alpha
Agility	3	.749
Flexibility	4	.836
Logistic Capability	4	.777
Lead Time	2	.781
Customer Loyalty	8	.809

Additionally, a reliability test was conducted to assess the internal consistency of the constructs. Cronbach's alpha values were utilized for internal reliability assessment, ranging from 0 to 1, with higher values indicating greater reliability. The reliability analysis was performed using SPSS to ascertain the reliability of the data collection instruments. There are a total of five variables, including the mediator and the dependent variable. The table reveals the following Cronbach's alpha values: Agility (0.749), Logistic Capability (0.836), Lead Time (0.777), Flexibility (0.781), and Customer Loyalty (0.809). According to the findings, all constructs exhibit Cronbach's alpha values exceeding 0.7, indicating strong reliability within the sample. Thus, the results indicate that the scale used is reliable within the context of the study.

Table 9: Validity Analysis

Variable	KMO	Bartlett's test of Sphericity		
		Approx. Chi-Square	Df	Sig
Agility	.656	73.234	3	.000
Flexibility	.736	179.435	6	.000
Logistic Capability	.735	105.840	6	.000
Lead Time	.500	51.530	1	.000
Customer Loyalty	.674	255.195	28	.000

The Kaiser–Meyer–Olkin (KMO) measure and Bartlett's Test of Sphericity were conducted to assess the suitability of the data for factor analysis and to confirm construct validity. The KMO values for Agility (0.656), Flexibility (0.736), Logistic Capability (0.735), and Customer Loyalty (0.674) exceed the recommended minimum threshold of 0.60, indicating adequate sampling adequacy for these constructs. Although the KMO value for Lead Time (0.500) is at the lower bound of acceptability, it remains sufficient to justify further analysis.

Bartlett's Test of Sphericity is statistically significant for all constructs ($p < 0.001$), demonstrating that the correlation matrices are not identity matrices and that meaningful relationships exist among the measurement items.

Table 10: Descriptive Analysis

	N	Mean	Std. Deviation	Variance
Agility	100	3.8567	.63785	.407
Flexibility	100	3.7250	.68119	.464
Logistic	100	3.7242	.63018	.397
Time	100	3.7650	.76030	.578
Valid N (listwise)	100			

As stated previously, five-point Likert scales were used in this study, and the mean value of the five-point scale is 3, and the following decision rules can be formulated based on that. M stands for mean value. If $M > 3$, the respondents' level of agreement with each variable is high. The agility of respondent is relatively high ($M=3.85$, $SD=0.63$). The Flexibility of respondents is also relatively high ($M=3.72$, $SD=0.68$). Another variable with a high mean value of 3.72 and a standard deviation of 0.63 is respondents' Perceived Convenience.

The mean values of the variables range from 3.72 to 3.85, while the standard deviation values vary with time. However, some skewness values are negatively skewed (-758, -070, -867). Two variable values are skewness values are positive skewed. Those are Logistic capability (0.019), Customer Loyalty (0.057) represent respectively.

Table 11: Pearson Correlation Value

Variable		Agility	Flexibility	Logistic capability	Time	Customer Loyalty
Agility	Pearson Correlation	1	0.594	0.614	0.586	0.581
Flexibility	Pearson Correlation	0.594	1	0.828	0.674	0.678
Logistic Capability	Pearson Correlation	0.614	0.828	1	0.654	0.717
Lead Time	Pearson Correlation	0.586	0.647	0.654	1	0.696

As a result, a correlation matrix assists the investigator in determine whether there is a link between each variable and each dependent variable and independent variable at the outset. The correlation analysis reveals strong and positive relationships among the dimensions of a responsive supply chain namely agility, flexibility, logistic capability, and lead time and customer loyalty. Agility shows a moderate positive correlation with customer loyalty ($r = 0.581$), indicating that supermarkets capable of responding quickly to market changes and customer demands tend to foster higher customer loyalty. Similarly, flexibility demonstrates a moderate positive relationship with customer loyalty ($r = 0.678$).

Logistic capability exhibits a strong positive correlation with customer loyalty ($r = 0.717$), highlighting logistics capability as a critical driver of customer loyalty in the supermarket sector. Lead time also shows a positive and relatively strong relationship with customer loyalty ($r = 0.696$), indicating that shorter and more reliable lead times significantly influence customers Loyalty. Strong interrelationships are observed among the independent variables

themselves, particularly between flexibility and logistic capability ($r = 0.828$), reflecting the integrated nature of responsive supply chain practices in retail operations. Overall, the correlation results suggest that improvements in supply chain responsiveness significantly contribute to enhancing customer loyalty in supermarkets operating in the Western Province.

Table 12: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin Waston
1	.785 ^a	.617	.601	.33482	1.776
a. Predictors: (Constant), Time, Agility, Flexibility, Logistic					

As per the results of analysis X, the R value shows the simple correlation, and it was 0.785. The adjusted R square value indicates how much of the total variation in the dependent variable can be explained by the independent variables. According to the result, 60.1% impact of responsive supply chain was described by the independent variables taken under the model 1 and remaining 39.9% impact of responsive supply chain is described by other factors which are beyond in the study. Durbin-Watson is 1.776 and it demonstrates that there is strong positive.

Table 13: Regression analysis of coefficient results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.186	.227		5.215	.000
Agility	.091	.071	.109	1.280	.204
Flexibility	.098	.092	.126	1.066	.289
Logistic capability	.273	.101	.324	2.696	.008
Lead Time	.236	.063	.339	3.763	.000

According to the regression analysis significant value of Agility is 0.204. As these values is greater than the 0.05 ($0.204 > 0.05$), There is no significant impact between Agility of responsive supply chain and customer loyalty. Accordingly, these results not supported to the first hypothesis of the study. H1: Agility in the supply chain has significant impact on customer loyalty.

Regression analysis findings indicate that the agility of responsive supply chain has a significant value of 0.000 the agility of responsive supply chain on customer loyalty in supermarkets, these values are less than 0.05 ($0.000 < 0.05$). And also, the above shows the significant value regarding to the flexibility of responsive supply chain, the value is 0.289. It is greater than the 0.05, There is no significant impact between responsive supply chain and customer Loyalty. Accordingly, these results not supported to second hypothesis of the study. H2: Flexibility of the supply chain has significant impact on customer loyalty.

Results of regression analysis show that significant value of Logistic Capability of responsive supply chain is 0.008. As these values is less than the 0.05 ($0.008 < 0.05$), there is a significant impact between Logistic capability of responsive supply chain and customer Loyalty. Accordingly, these results supported to the third hypothesis of the study. H3: High logistic capability of the supply chain has significant impact on customer loyalty.

Table shows that significant value of lead time of responsive supply chain is 0.000. As these values is less than the 0.05 ($0.000 < 0.05$), there is a significant impact between Lead time of responsive supply chain and customer Loyalty. And also, beta value is 0.339. Accordingly, this results it supported to the fourth hypothesis of the study. H4: High lead time consuming continuously of supply chain has impact on customer loyalty.

5. DISCUSSION

This study examined the impact of a responsive supply chain on customer loyalty in supermarkets in the Western Province of Sri Lanka, with particular emphasis on agility, flexibility, logistics capability, and lead time. The findings provide valuable empirical insights into how different dimensions of supply chain responsiveness influence customer loyalty in a highly competitive retail environment.

The regression model explains 60.1% of the variance in customer loyalty, indicating that responsive supply chain dimensions collectively play a substantial role in shaping customer loyalty in supermarkets. The strong model fit ($R = 0.785$) confirms that responsiveness-related practices are critical drivers of customer-related outcomes. This aligns with prior studies suggesting that responsive supply chains enhance customer satisfaction and loyalty

by ensuring timely product availability, efficient service, and adaptability to market changes (Swink et al., 2005; Zhao et al., 2021).

The Durbin–Watson statistic (1.776) further confirms the absence of autocorrelation, strengthening the validity of the regression results.

5.1 Agility and Customer Loyalty

Contrary to expectations, supply chain agility did not show a statistically significant impact on customer loyalty ($p = 0.204$). Although correlation analysis indicated a moderate positive relationship between agility and customer loyalty ($r = 0.581$), this relationship did not remain significant in the multivariate regression model. This finding suggests that while agility defined as the ability to respond quickly to changes is valued, it may not independently drive customer loyalty in supermarkets when other factors such as logistics capability and lead time are considered simultaneously. In the Sri Lankan supermarket context, customers may not directly perceive internal agility-related practices (e.g., rapid decision-making or adaptive processes), reducing their visible impact on loyalty. This result partially contrasts with studies by Liu et al. (2022) and Choi and Hartley (2020), who found agility to be a key contributor to customer satisfaction. However, it supports the argument that agility may function more effectively as a supporting or mediating capability rather than a direct determinant of loyalty.

5.2 Flexibility and Customer Loyalty

Similarly, supply chain flexibility did not have a significant impact on customer loyalty ($p = 0.289$), despite showing a moderate positive correlation ($r = 0.678$). This indicates that flexibility such as the ability to adjust volumes or product variety may not translate directly into customer loyalty unless it results in tangible service outcomes. This finding aligns with Fayezi (2016), who argued that flexibility often operates in combination with other responsiveness dimensions. In supermarkets, customers may see flexibility as a basic operational requirement rather than a differentiating factor, thereby limiting its influence on loyalty perceptions.

5.3 Logistics Capability and Customer Loyalty

In contrast, logistics capability demonstrated a strong and statistically significant impact on customer loyalty ($\beta = 0.324$, $p = 0.008$). This highlights logistics capability as one of the most influential

dimensions of supply chain responsiveness in the supermarket sector. This result strongly supports previous empirical findings (Asamoah et al., 2021; Hofmann, 2010), which emphasize that efficient logistics such as reliable distribution, inventory accuracy, and information sharing directly enhance customer satisfaction and repeat patronage. In supermarkets, customers interact frequently with logistics outcomes through product availability, shelf replenishment, and consistent service quality, making logistics capability highly visible and impactful.

5.4 Lead Time and Customer Loyalty

Lead time emerged as the most significant predictor of customer loyalty ($\beta = 0.339$, $p < 0.001$). This indicates that shorter, reliable, and predictable lead times significantly enhance customer loyalty in supermarkets. This finding is consistent with Etienne (2016) and Nilakantan (2019), who emphasized that lead time is a critical measure of supply chain responsiveness. In the retail context, reduced lead time ensures consistent product availability, minimizes stockouts, and improves customer trust key drivers of loyalty. The result further confirms that customers are highly sensitive to delays and inconsistencies, particularly in fast-moving consumer goods environments.

Overall, the findings support the responsiveness view of supply chain management, which emphasizes timely response, adaptability, and customer-oriented performance (Gunasekaran et al., 2008). While agility and flexibility are theoretically important, their effects on customer loyalty appear to be indirect or contingent upon more visible outcomes such as logistics efficiency and lead time reduction.

The strong intercorrelations among agility, flexibility, logistics capability, and lead time suggest that these dimensions are highly interconnected. However, only logistics capability and lead time exert a direct and significant influence on customer loyalty, highlighting the importance of operational execution over internal process capabilities in shaping customer perceptions.

The general objective of this research is to identify the impact of responsive supply chain on customer loyalty in supermarket. This research study focused to the primary data and structures questionnaire to collect the required data in 100 of supermarket customers in western province. The study also offers different

insights by searching at how responsive supply chains affect businesses' capacity to draw in, keep, and satisfy customers a topic that has not previously been investigated. It turns out that the responsiveness of the logistics process directly increases customer loyalty. Further research found a strong correlation between customer loyalty and agility, flexibility, logistic capability, and lead time.

REFERENCES

- Asamoah, D., Nuertey, D., Agyei-Owusu, B. and Akyeh, J., 2021. The effect of supply chain responsiveness on customer development. *International Journal of Logistics Management*, 32(4), pp.1190–1213. <https://doi.org/10.1108/IJLM-03-2020-0133>
- Etienne, E.C., 2016. Supply Chain Responsiveness and the Inventory Illusion. *Supply Chain and the Inventory Illusion*, July. <https://doi.org/10.1080/16258312.2005.11517138>
- Filipe, S., Marques, S.H. and Salgueiro, M. de F., 2017. Customers' relationship with their grocery store: Direct and moderating effects from store format and loyalty programs. *Journal of Retailing and Consumer Services*, 37(July 2016), pp.78–88. <https://doi.org/10.1016/j.jretconser.2017.03.002>
- Gligor, D.M. and Holcomb, M.C., 2012. Understanding the role of logistics capabilities in achieving supply chain agility: A systematic literature review. *Supply Chain Management*, 17(4), pp.438–453. <https://doi.org/10.1108/13598541211246594>
- Gunasekaran, A., Lai, K. and Edwin Cheng, T.C., 2008. Responsive supply chain: A competitive strategy in a networked economy. *Omega*, 36(4), pp.549–564. <https://doi.org/10.1016/j.omega.2006.12.002>
- Haiming, L., Peng, Y., Jiaxiang, L. and Mei, Z., 2009. Optimization algorithm for low-volume and high-mix PCB assembly. In *5th International Conference on Natural Computation, ICNC 2009*, pp.379–383. <https://doi.org/10.1109/ICNC.2009.455>
- Hofmann, E., 2010. Linking corporate strategy and supply chain management. *International Journal of Physical Distribution &*

- Logistics Management, 40(4), pp.256–276.
<https://doi.org/10.1108/09600031011045299>
- Hum, S.H. and Parlar, M., 2014. Measurement and optimization of supply chain responsiveness. *IIE Transactions*, 46(1), pp.1–22.
<https://doi.org/10.1080/0740817X.2013.783251>
- Liyanage, L., PLGSD, P. and others, 2020. Determinants of consumers' selection of supermarkets for grocery shopping: Empirical evidence from Western Province, Sri Lanka. In *Conference on Marketing*, June 2021. Available at: https://www.researchgate.net/profile/Tharindu-Rathnayake/publication/352039209_Determinants_of_Consumers'_Selection_of_Supermarkets_for_Grocery_Shopping_Empirical_Evidence_from_Western_Province_Sri_Lanka/links/60b6a4e74585154e5ef98594/Determinants-of-Cons
- Nilakantan, K., 2019. Replenishment control systems for responsive supply chains under dynamic and sudden lead-time disturbances. *International Journal of Systems Science: Operations and Logistics*, 6(4), pp.320–345.
<https://doi.org/10.1080/23302674.2018.1433897>
- Nurwin Fozia Rajab, Y.M., 2016. Effect of supplier responsiveness on procurement performance. *Journal of Business and Management*, 18(3), pp.54–59.
<https://doi.org/10.9790/487X-1803025459>
- Polozov, S.M., Rashchikov, V.I. and Demsky, M.I., 2016. Beam dynamics in new 10 MeV high-power electron linac for industrial application. In *25th Russian Particle Accelerator Conference, RuPAC 2016*, pp.493–495.
- Richey, R.G., Roath, A.S., Adams, F.G. and Wieland, A., 2022. A responsiveness view of logistics and supply chain management. *Journal of Business Logistics*, 43(1), pp.62–91.
<https://doi.org/10.1111/jbl.12290>
- Fayezi, S., 2016. Understanding and development of supply chain agility and flexibility: A structured literature review. *International Journal of Management Reviews*, pp.379–407.
- Alzoubi, H.M. and E-G-A, H., 2022. The role of supply chain integration and agile practices in improving lead time during the COVID-19 crisis. *International Journal of Service Science*, 11.

- Inha, A.K., Swati, P. and Anand, A., 2015. Management Science Letters, 5, pp.639–650. <https://doi.org/10.5267/j.msl.2015.4.001>
- Sri Lanka Crisis: Supermarkets in Sri Lanka Capital Rapidly Running Out Of Food Report, n.d.
- Swink, M., Narasimhan, R. and Kim, S.W., 2005. Manufacturing practices and strategy integration: Effects on cost efficiency, flexibility, and market-based performance. *Manufacturing & Service Operations Management*, 36(3), pp.427–457.
- Tenreng, M., Idrus, A., Lalo, A. and Badruddin, S., 2019. Perceived service quality, supply chain collaboration, supply chain management as antecedents of loyalty and customer satisfaction: Exploring moderating role of WOM. *International Journal of Supply Chain Management*, 8(6), pp.412–419.
- Zaid, S., Palilati, A., Madjid, R. and Abadi, S.Y., 2021. The effect of supply chain integration on customer loyalty: The mediating roles of operational performance and customer satisfaction. *Uncertain Supply Chain Management*, 9(4), pp.867–876. <https://doi.org/10.5267/j.uscm.2021.8.002>

IMPACT OF STORE ATMOSPHERIC ON PATRONAGE INTENTION OF FASHION WEAR CONSUMERS IN COLOMBO DISTRICT

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ABSTRACT

The purpose of this paper is to investigate the impact of store atmospherics on the patronage intention of fashion wear consumers in the Colombo District of Sri Lanka, due to the limited empirical focus on atmospheric influences in the local fashion retail context. The study identifies three key store atmospheric variables: general interior factors, human factors, and general exterior factors as independent variables, while patronage intention serves as the dependent variable. Data were collected using a questionnaire distributed online through Google Forms, yielding 310 valid responses from fashion wear consumers in Colombo. Data analysis was conducted using the statistical Package for the Social Sciences (SPSS), and multiple regression analysis was employed to examine the relationship between the store atmosphere variables and customer patronage intention. The results indicated that all three store atmospheric variables have a statistically significant and positive impact on patronage intention, leading to acceptance of all three hypotheses. Further, research study findings suggest that luxury fashion wear retailers should promote their products by highlighting their atmospheric characteristics. More attention should be paid to cleanliness, flooring and carpeting, attractive and practical way of using the interior lightings of the fashion wear shops, calm music at the fashion wear shops which can be enjoyed by the customers, arrangement, cleanliness and maintenance of the interior designs of the shops.

Keywords: Fashion wear stores, Patronage intention, Store atmosphere

1. INTRODUCTION

The store atmosphere is crucial in today's fast-paced society, according to earlier studies (Ex: Hussain & Ali, 2015; Francioni, Savelli & Cioppi, 2018; Anderson & Sin, 2020). To make it simpler to modify every store, retailers use various combinations of stimulants to create an appealing storage environment. Helmfalk and Hulten (2017) pointed out that most studies only tested one store atmospheric stimulus rather than a number of them concurrently. The goal of improving the shopping experience for customers is shared by academics and retailers, which drives ongoing study into the impact of the store atmosphere on consumer behavior and makes it a crucial factor in deciding on the store structure choice (Farias, Aguiar & Melo 2014).

According to Jain and Bagdare (2011), the goal of retailing has changed from completing transactions to creating long-lasting connections through providing distinctive shopping experiences. It has been shown that the atmosphere affects consumers' intentions to make purchases and, consequently, the outcomes of their shopping experiences (Roschk, Loureiro & Breitsohl, 2017). Levy and Weitz (2011) define store atmosphere as an element that tries to enhance the retail experience through the use of a variety of cues, including lighting, color, music, and scent. Customer experiences in stores may be wonderful and engaging, which has a direct impact on how customers behave. This study contributes to the understanding of how store atmosphere influences customer intention to purchase in the fashion wear industry.

Customers are influenced by many service atmospheric factors in different ways, according to research. Examples include music (Milliman, 1986; North & Hargreaves 1998; Wilson, 2003), light (Barli, Bilgili & Dane, 2006; Barli et al., 2012; Ozkul et al., 2019; Heung & Gu, 2012; Temeloglu, Taşpnar & Soylu, 2017), color (Barli et al., 2006; Barli et al., 2012; Bilgili et al., 2018), facility aesthetics, atmosphere, spatial arrangement, staff, and window look (Heung & Gu, 2012) can all have a more impact on how customers feel about a business and whether or not they would return for more.

Paulins & Geistfeld (2003) propose that women's clothes shops must be prepared to incorporate attractive products that may be competitive, however store casual observation suggests that many apparel retailers rely primarily on display fixtures to enhance visual merchandise.

Research shows that service atmospherics play an essential role in marketing (Dedeoglu et al., 2018; Heung & Gu, 2012; Liu & Jang, 2009; Musa & Thirumoorthi, 2011). According to Bitner (1992, p.57) there is a startling lack of empirical research or theoretically based frameworks in marketing that address the significance of physical surroundings in consuming situations. As this body of information has expanded since these early publications, marketing professionals have found that, if physical stimuli have any impact on consumer behavior, creating influential atmospheres should to be a key component of most exchange environments' marketing efforts.

According to Vivek, Beatty & Morgan (2012), previous studies have provided limited scope for examining customer responses, potentially overlooking important aspects of customer behavior. It's accurate and dependable to analyze the impact of the store environment. As a result, the empirical gaps in the study can be found. Therefore, the examine gives a thrilling perception into the impact general interior factors, human factors, general exterior factors of store atmosphere about the patronage intention may be taken into the examine thinking about fashion wear shops in Colombo district. Since Colombo is Sri Lanka's financial centre, the Colombo area has a higher concentration of clothing retailers (Johansson & Emmanuel, 2006). Additionally, more people are buying fashion wears from Colombo, which has increased demand for the city's fashion wears.

2. LITREATURE REVIEW

The existing literature has shown that a variety of store atmosphere elements affect the consumer purchase intention. Baker et al.,(2002) stated that the way a business environment is designed can have a special emotional influence and could increase the possibilities of buying intentions.

According to Kotler (1973), "atmospheres" refers to "the deliberate design of space to induce certain buyer effects, specifically the deliberate design of buying environments to produce specific emotional responses in the consumer that boost his purchase probability" (Kotler, 1973, p. 3). That claim implies that atmospherics can be thought of as a methodical planning of the environment, which influences the consumer's decision to purchase the required products or services. Thus, certain atmospheric conditions influence consumer purchasing.

By diverting clients' attention and keeping them entertained, improving the store's atmosphere can increase the likelihood that they will make a purchase. Levy & Weitz (2004) suggest that retailers might creatively manipulate a store's layout or product presentation to change how consumers felt about the atmosphere. They can also improve the atmosphere of the store by using visual messages (signs and graphics), lighting, colors, and even scents.

According to earlier research, human factors, general interior variables, and general exterior variables can all be seen as essential in various aspects (E.g., Turley & Milliman, 2000; Berman & Evans, 2004). Since the exterior of a marketing facility (such as a retail store, restaurant, etc.) must be deemed acceptable before the building's inside is ever experienced, general external characteristics are important.

According to the study of Turkey and Miliman (2000) identified categorized of the general internal variables. These include the carpeting and flooring, color schemes, lighting, music, scents, temperatures, cleanliness, smoke from cigarettes, the size of the aisles, and the merchandise on sale. This also includes four physical traits. These four elements are the mall's common areas, the make-up of the ceiling and walls, the paint and wallpaper, and the make-up of the walls. The first factor has been ignored because smoking is not permitted in shopping centres. The other two factors were thought to be more appropriate in a store setting than in a shopping mall.

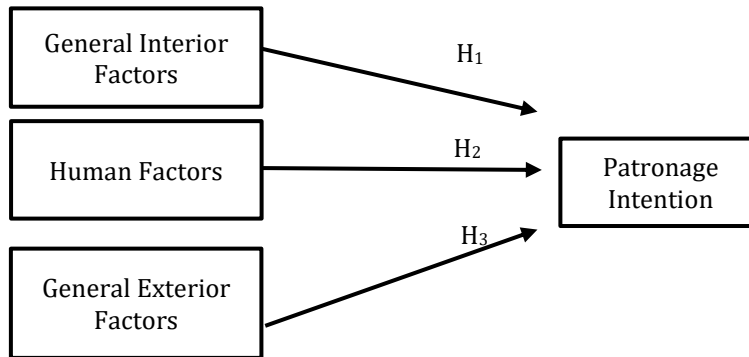
According to Milliman (2000), human factors such as employee appearance, friendliness, and service quality significantly influence consumer behavior in retail settings. Poor service or unprofessional staff can reduce customer satisfaction (Bitner, 1990), while friendly and attentive employees enhance the shopping experience (Baker, Levy & Grewal, 1992). Additionally, the presence of other customers affects perceptions of crowding, which can either improve or harm customer emotions depending on the situation (Machleit et al., 2000). While high density may cause discomfort, studies show cultural differences in how crowding is experienced for example, consumers in collectivist cultures like Taiwan may find crowded environments more acceptable (Li, Kim & Lee, 2009; Hofstede, 2001). Therefore, human interaction, both from staff and other customers, remains a critical but often underexplored factor influencing patronage intention.

There isn't much thought given to the external factors which influence the atmosphere of the store. Previous studies found that consumer's

behaviour is influenced by taking into account the attributes of the store's storage space. Customers were shown to be able to conceptualize important, complex macro settings. However, this varied significantly depending on the sort of shopper (Grossbart et al., 1975, cited in Langrehr, 1991). A technique for assessing how window display design affects sales has been developed (Edwards & Shackley, 1992). There is disagreement over the idea that the settings in which physicians see their patients have an impact on patients' opinions of the care they received and their satisfaction (Pinto & Leonidas, 1994 as cited in Turley & Chebat, 2002).

Patronage intention refers to a consumer's likelihood to visit a store, make repeat purchases, and recommend it to others, and is widely accepted as a strong predictor of actual behavior (Ajzen, 2005; Mahardika et al., 2020). As noted by Nonis and Swift (2001), it serves as a proxy for actual consumer behavior, particularly in retail settings. Previous studies (e.g., Baker et al., 2002; Liu & Jang, 2009) emphasize that favourable atmospherics such as pleasant music, appealing design, and low perceived crowding significantly influence customers' emotional responses and post-behavioral intentions like word-of-mouth and repeat visits. The expectation of minimal wait time, as highlighted by Grewal et al. (2003) and Hui & Bateson (1991), also plays a critical role in shaping consumers' decision to patronize a store. Furthermore, environmental factors like music have been shown to elevate customer mood and enhance their intention to return (Kemp et al., 2019; Yi & Kang, 2019). Patronage intention has also been linked to business growth, as repeat customers are more profitable, less price-sensitive, and more likely to attract new buyers through positive referrals (Tsai, 2010; Bove & Johnson, 2009). Therefore, understanding and influencing patronage intention is essential for sustaining customer loyalty and long-term retail success. Based on the extracts of literature review the following conceptual framework was developed. The patronage intention as dependent variable, and the general interior factors, human factors and general exterior factors as independent variables.

Figure 1: Conceptual framework



Source: Developed by researcher

2.1 Relationship between Store Atmosphere and Patronage Intention

Store atmospheric variables including general interior factors, general exterior factors and human factors significantly influence consumer patronage intention in retail environments (Turley & Milliman, 2000; Mower, Kim & Childs, 2012). For example, Pal and Srivastava (2024) demonstrate that multi-sensory atmospheric experiences including interior ambience, exterior design, and staff interactions positively affect mall patronage intention. In Sri Lanka, Perera et al. (2024) found that among various atmospheric variables, human factors specifically employee friendliness and helpfulness were the strongest predictors of supermarket patronage intention.

Based on these literatures, the following hypotheses are developed:

H1; There is a significant influence of general interior factors on patronage intention

H2; There is a significant influence of human factors on patronage intention.

H3; There is a significant influence of general exterior factors on patronage intention.

3. METHODOLOGY

The study adopted a quantitative research design. This study follows the positivism philosophy because, the theory and the hypotheses have been developed upon the existing knowledge and theories. Research approach for the study was deductive as hypotheses were

developed and the survey methodology has been followed for the study. All members who meet specific criteria for a research study are referred to as the target population in a research study (Greener, 2008). This research study addressed the consumers who purchase fashion clothing retail stores in Colombo District. In this research the total population of Colombo District was considered as population. The required sample size was determined using the Krejcie and Morgan (1970) sample size table, which recommends a minimum of 384 responses for large populations. A total of 384 questionnaires were distributed through structured, self-administered online survey via email and social media platforms, and 310 completed responses were received, yielding a response rate of 80.73%. The study adapted a non-probability convenience sampling technique, which allows for the selection of respondents based on accessibility and willingness to participate. The questionnaire was structured into three main sections. The first section collected demographic data including age, gender, education level, occupation, monthly income, and family size, and the second section measured the general interior factors, human factors, general exterior factors (as independent variables), and third section measured the patronage intention (as the dependent variable). All items were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Statistical Package for Social Science (SPSS) 22 was utilized for analysing primary data of this study.

Table 1: Operationalization of variables

Variables	Indicators	Source
General Factors	Interior Flooring and carpeting	Chebat & Morrin, 2007
	Lighting	Schielke & Leudesdorff, 2015
	Music	Schielke & Leudesdorff, 2015
	Cleanliness	Elmashhara & Soares, 2020
Human Factors	Assertive	Crutsinger et al., 2010
	Amiable	Jones, 2014

		Expressive	Tamang, 2020
General Factors	Exterior	Exterior window display	Sen et al., 2002
		Parking	Keng et al., 2007
		Security	Keng et al., 2007
Patronage Intention		Likelihood of intending to shop	Nonis and Swift, 2010
		wait expectations	Hui et al., 1997
		Satisfaction of the experience	Grewal et al., 2003
		Loyalty for the shop	Grewal et al., 2003

Source: Researcher developed based on the literature

4. DATA ANALYSIS & RESULTS

4.1 Characteristics of the Sample

Table 2: Demographical characteristics of the respondents

Demographic variable	Category	Frequency	Percentage
Gender	Male	117	37.7%
	Female	193	62.3%
Age Group	18-30 years	175	56.5%
	31-40 years	93	30%
	41- 50 years	26	8.4%
	51 or above	16	5.2%
Education Level	School Level	28	9%
	Diploma	50	16.1%
	Undergraduate	77	24.8%
	Graduate	108	34.8%
	Postgraduate	34	11%
	PHD holder	13	4.2%
Monthly Income (LKR)	Up to 30,000	65	21%
	30,001-50,000	123	39.7%
	50,001- 100,000	81	26.1%

100,001- 150,000	30	9.7%
150,001 or above	11	3.5%

Of 310 respondents for this study, 62.3% of them were female and other rest 37.7% was male. In the case of age of the respondents, 56.5% of them were between the age 18-30 and 30% of them were between the ages of 31-40. 34.8% of the respondents were graduates and 24.8% were undergraduates. 39.7% of the respondents belonged to the income category 30,001-50,000 and 26.1% were between 50,001-100,000.

4.2 Validity and Reliability Analysis

Validity is a critical criterion indicating the extent to which an instrument measures what it is intended to measure (Kothari, 2004). To ensure the validity of the dataset, the researcher used the KMO measure and Bartlett's Test. These tests were applied to assess the sampling adequacy of the data collected through the questionnaire survey.

According to George and Mallery (2019), KMO values below 0.5 are considered unacceptable. Values between 0.7 and 0.89 are considered middling to meritorious. In this study, General Interior Factors (KMO = 0.869) and General Exterior Factors (KMO = 0.866) fall within the meritorious range, while Human Factors (KMO = 0.738) fall within the middling range. The dependent variable, Patronage Intention, also recorded a meritorious KMO value of 0.820. All variables showed significant Bartlett's Test results ($p = 0.000$), confirming the adequacy of the data for factor analysis.

Table 3- KMO and Bartlett's test for the variables

Variable		Number of items	KMO value	Significant Value	Decision
General Factors	Interior	6	0.869	0.000	Acceptable
Human Factors		5	0.738	0.000	Acceptable
General Factors	Exterior	6	0.866	0.000	Acceptable
Patronage Intention		5	0.820	0.000	Acceptable

Further, reliability analysis was conducted to assess the internal consistency of the measurement items used in the questionnaire. Reliability, in this context, refers to the extent to which the instrument yields consistent results under repeated trials. Cronbach's alpha (α)

coefficient was employed as the primary measure to evaluate the internal consistency of each variable.

According to Thompson (2010), reliability examines the internal consistency among a set of items that are interchangeable. George and Mallery (2003) stated that acceptable Cronbach's alpha values generally range between 0.0 and +1.0, and the closer the value is to 1.0, the higher the internal consistency of the items. Furthermore, Nunnally and Bernstein (1994) proposed that a Cronbach's alpha coefficient of 0.70 or above is considered satisfactory. They also noted that values between 0.60 and 0.70 may be acceptable in some exploratory research, while values below 0.60 are typically regarded as poor.

Table 4 : Reliability analysis for the variable

Variable	Items	Alpha Values
Patronage Intention	5	0.799
General Interior Factors	6	0.904
Human Factors	5	0.829
General Exterior Factors	6	0.897

Source: SPSS analysis results

As shown in Table 4, all variables recorded Cronbach's alpha values above 0.70, ranging from 0.799 to 0.904. This indicates a satisfactory level of internal consistency, confirming that the questionnaire was a reliable tool for data collection.

4.3 Descriptive Statistics

In order to understand the basic nature of the research variables, descriptive statistics were performed (Table 5). According to the analysis, mean values for four variables; general interior factors, human factors, general exterior factors, and patronage intention respectively 4.0505, 3.9103, 4.0032 and 3.9935 means values which have dispersed from the mean values amounting to 0.76872, 0.80938, 0.79947 and 0.71721 of standard deviation lay at the acceptable range.

Table 5: Descriptive statistics

Variable	Minimum	Maximum	Mean	Standard Deviation
General Interior Factors	1.00	5.00	4.0505	0.76872

Human Factors	1.00	5.00	3.9103	0.80938
General Exterior Factors	1.00	5.00	4.0032	0.79947
Patronage Intention	1.40	5.00	3.9935	0.71721

Source: SPSS analysis results

4.4 Correlation Analysis

Pearson correlation coefficient was used to determine the strength of the relationship between the variables. Table 6 presents the correlation results. There is a moderately positive relationship between the independent variables and the dependent variable. The results reveal a positive significance relationship at 5% significance level.

Table 6: Correlation analysis

Variables	Pearson correlation	Significance
General Interior Factors and Patronage Intention	0.566	0.000
Human Factors and Patronage Intention	0.488	0.000
General Exterior Factors and Patronage Intention	0.518	0.000

Source: SPSS analysis results

4.5 Regression Analysis

The study employed multiple regression analysis to evaluate the hypothesis. Multiple regression analysis examines the linear relationships between a dependent variable and a number of independent variables by calculating coefficients for the equation for a straight line.

From Table 7, R-Square is 0.398 which indicated that 39.8% of the variances in patronage intention of fashion wear consumers can be explained by general interior factors, human factors, general exterior factors. In the meantime, 60.2% of the variances in patronage intention of fashion wear consumers are explain by unknown factors. Adjusted R square was 0.392. It indicated that model is reasonable fitted to the data.

Table 7: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.631	0.398	0.392	0.55936

Source: SPSS analysis results

Table 8 ANOVA shows that the F-ratio value of 67.334 with a significance level of 0.000b (p-value = .000), which is below 0.05. This indicated that there is a statistically significant difference between the dependent variable (patronage intention) and independent variables (general interior factors, human factors, general exterior factors). Therefore, the overall model is significance and the fitness of the model is considered high.

Table 8: ANOVA test

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	63.204	3	21.068	67.334	0.000 ^b
Residual	95.744	306	0.323		
Total	158.947	309			

Source: SPSS analysis results

According to the data presented in table 9 the general interior factors has statistically significant value which is 0.000 as well as significant value of general exterior factors also is 0.000. And the human factors significant value is 0.002. So general interior factors, human factors, general exterior factors have regression relationship. Beta Coefficient value of general interior factors is 0.323. This means is when general interior factors change in 1 unit it affect to the patronage intention by 0. 323.And also, Beta Coefficient value of human factors is 0.158. This means when human factors change in 1 unit it affect to the patronage intention by 0.158. And the Beta Coefficient value of general exterior factors is 0.199. This means is when general exterior factors change in 1 unit it affect to the patronage intention by 0.199.

Table 9: Coefficients table

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.273	.194		6.554	.000

General Interior Factors	.323	.053	.346	6.096	.000
Human Factors	.158	.050	.178	3.151	.002
General Exterior Factors	.199	.052	.221	3.811	.000

Source: SPSS analysis results

4.6 Hypotheses Results

H1 – There is a significant influence of general interior factors on patronage intention.

Based on Table 4.19, the p-value for general interior factors ($p=0.000$) is less than the alpha value of 0.05. Therefore, H1 is supported. At this level of significance, accepted H1 and conclude that general interior factors is significantly related to patronage intention of fashion wear consumers. There is a moderately positive relationship between general interior factors and patronage intention of fashion wear consumers.

H2 – There is a significant influence of human factors on patronage intention.

Based on Table 4.19, the p-value for human factors ($p=0.002$) is less than the alpha value of 0.05. Therefore, H2 is supported. At this level of significance, accepted H2 and conclude that human factors is significantly related to patronage intention of fashion wear consumers. There is a moderately positive relationship between human factors and patronage intention of fashion wear consumers.

H3 – There is a significant influence of general exterior factors on patronage intention.

Based on Table 4.19, the p-value for general exterior factors ($p=0.000$) is less than the alpha value of 0.05. Therefore, H3 is supported. At this level of significance, accepted H3 and conclude that general exterior factors is significantly related to patronage intention of fashion wear consumers. There is a moderately positive relationship between general exterior factors and patronage intention of fashion wear consumers.

5. DISCUSSION OF THE FINDINGS

The findings of this study reveal that general interior factors, general exterior factors, and human factors all have a significant impact on the

patronage intention of fashion wear consumers in the Colombo District, which is largely consistent with previous research in retail atmospherics. The strong effect of general interior factors on patronage intention is consistent with prior research by Baker et al. (2002) and Liu and Jang (2009), who emphasized that lighting, layout, colours, and overall ambience strongly shape consumers' emotions and their willingness to spend time in a store. This suggests that Colombo consumers, much like shoppers in other contexts, are sensitive to the in-store environment and are more likely to return when the interior experience is pleasant and well-designed. Human factors also play a meaningful role, aligning with findings by Milliman (2000) and Baker, Levy, and Grewal (1992), which show that employee friendliness, attentiveness, and quality of interaction can positively affect consumer attitudes. However, unlike some studies in service-heavy retail environments where human interaction is the strongest predictor of consumer behaviour, this study found that while important, human factors are slightly less influential than interior elements, highlighting the relative importance of store atmosphere for Colombo consumers. The positive effect of general exterior factors supports the conclusions of Turley and Milliman (2000) and Keng et al. (2007), who highlighted that elements such as storefront design, window displays, parking, and security influence first impressions and the decision to enter a store. Yet, in contrast to some international studies where exterior cues sometimes dominate, in the Colombo fashion retail context, exterior features matter but carry slightly less weight than interior design elements. Overall, the regression analysis, which shows that these three variables together explain 39.2% of the variance in patronage intention, aligns with research from similar developing markets, while also suggesting that other factors like price, product assortment, or brand perception may further shape consumer behaviour. In sum, the findings support established theories on store atmospherics while also revealing unique contextual patterns that reflect the preferences and shopping behaviours of fashion consumers in Colombo.

6. CONCLUSIONS AND CONTRIBUTIONS

The study examined the impact of store atmospheric factors general interior factors, human factors, and general exterior factors on patronage intention of fashion wear consumers in Colombo District. The results indicated that customers' patronage intentions of the

fashion wear in the Colombo area were positively correlated with general interior factors, human factors, and general exterior factors. It indicates that all of the store atmospheric factors that influence the patronage intention have significant relationship. It may be derived that fashion wear retail marketers need to create successful plans and strategies to raise consumer patronage intention, especially during times where desire to purchase fashion items has declined. Fashion wear retailers should emphasize the store atmospheric factors of their products when marketing them. Interior factors for customers should be improved in order to encourage them to spend more time inside the store and make more purchases. Also, when developing standard operating procedures and other service standards, fashion wear stores should consider human factors. The study acknowledged that general interior factors such as lighting, music, cleanliness, and flooring and carpeting directly affect consumers' patronage intention. Therefore, paying closer attention to the cleanliness of the carpeting and flooring, using interior lighting in fashion wear stores in an appealing and useful way, providing customers with calming music in the stores, and organizing, maintaining, and cleaning the interior designs of the shops may be very important to retailers. The findings of this study will aid fashion clothing retailers to understanding the crucial part atmospherics play in keeping consumers in their retail stores. As previously stated, the attraction of the retail store atmosphere may always be an additional marketing technique because it consistently demonstrates to satisfy the consumer demands with a pleasant environment. As a result, it helps increase positive word of mouth among customers. Although shoppers may have less intention to return due to present market conditions, the study found that customers were interested in attractive exterior factors like advertisements. Therefore, the study recommended fashion wear outlets to concentrate on external factors while giving the interior of the retail business greater attention. Hence, fashion retail shops can increase customer patronage intention using proper store atmospherics.

6.1 Limitations and Future Research Directions

Despite its contributions, this study has several limitations that should be acknowledged. The use of a non-probability convenience sampling technique may restrict the generalizability of the findings to the wider population of fashion wear consumers in Sri Lanka; therefore, future studies are encouraged to adopt probability

sampling methods to enhance representativeness. Additionally, this study examined only selected store atmospheric variables, and future research could extend the model by incorporating factors such as pricing strategies, brand image, and product assortment. Longitudinal research designs are also recommended to capture changes in consumer patronage behaviour over time and provide deeper insights into evolving retail dynamics.

REFERENCES

- Ajzen, I. (2005). *Attitudes, personality and behaviour* (2nd ed). McGraw-Hill Education (UK).
- Anderson, S., & Sin, L. G. (2020). The influence of store atmosphere on purchasing decisions and customer satisfaction: A case study at the Pacific Restaurant, Blitar. *Journal of the Community Development in Asia (JCDA)*, 3(3), 70-78.
- Baker, J., Levy, M., & Grewal, D. (1992). An experimental approach to making retail store environmental decisions. *Journal of retailing*, 68(4), 445.
- Baker, J., Parasuraman, A., Grewal, D., & Voss, G. B. (2002). The influence of multiple store environment cues on perceived merchandise value and patronage intentions. *Journal of marketing*, 66(2), 120-141.
- Barlı, O., Aktan, M., Bilgili, B., & Dane, S. (2012). Lighting, indoor color, buying behavior and time spent in a store. *Color Research & Application*, 37(6), 465-468.
- Berman, B., & Evans, J.R. (2004). *Retail Management :A Strategic Approach*. (9th ed). Prentice Hall.
- Bitner, M. J. (1992). Servicescapes: The impact of physical surroundings on customers and employees. *Journal of marketing*, 56(2), 57-71.
- Bove, L. L., & Johnson, L. W. (2009). Does “relationship marketing” really pay off for loyal customers? *Journal of Business Research*, 62(6), 601-607.
<https://doi.org/10.1016/j.jbusres.2008.05.003>

- Chebat, J. C., & Morrin, M. (2007). The effects of store music on consumers' emotional states, memory for store, and purchasing intentions. *Journal of Retailing*, 83(3), 361–371. <https://doi.org/10.1016/j.jretai.2007.03.005>
- Crutsinger, C., Knight, D. K., & Kim, H. J. (2010). Generational differences in consumer decision-making styles. *Family and Consumer Sciences Research Journal*, 38(4), 362–381.
- Edwards, S., & Shackley, M. (1992). Measuring the effectiveness of retail window display as an element of the marketing mix. *International Journal of advertising*, 11(3), 193-202.
- Elmashhara, M. G., & Soares, A. M. (2020). Store environment and purchase intention: The mediating role of emotional experience. *International Journal of Retail & Distribution Management*, 48(2), 154–169. <https://doi.org/10.1108/IJRDM-02-2019-0065>
- Farias, S. A., Aguiar, E. C., & Melo, F. V. S. (2014). Store atmosphere and experiential marketing: A conceptual framework and research propositions for an extraordinary customer experience. *International Business Research*, 7(1), 87–99.
- Francioni, B., Savelli, E., & Cioppi, M. (2018). Store satisfaction and store loyalty: The moderating role of store atmosphere. *Journal of Retailing and Consumer Services*, 43(C), 333-341.
- George, D., & Mallery, P. (2019). *IBM SPSS statistics 25 step by step: A simple guide and reference* (15th ed.). Routledge.
- Greener, S. (2008). *Business research methods*. Ventus Publishing ApS.
- Grewal, D., Baker, J., Levy, M., & Voss, G. B. (2003). The effects of wait expectations and store atmosphere evaluations on patronage intentions in service-intensive retail stores. *Journal of retailing*, 79(4), 259-268.
- Grossbart, S. L., Mittelstaedt, R. A., Curtis, W. W., & Rogers, R. D. (1975). Environmental sensitivity and shopping behavior. *Journal of Business Research*, 3(4), 281-294.

- Helmefalk, M., & Hultén, B. (2017). Multi-sensory congruent cues in designing retail store atmosphere: Effects on shoppers' emotions and purchase behavior. *Journal of Retailing and Consumer Services*, 38, 1-11.
- Heung, V. C., & Gu, T. (2012). Influence of restaurant atmospherics on patron satisfaction and behavioral intentions. *International Journal of Hospitality Management*, 31(4), 1167-1177.
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations* (2nd ed.). Sage.
- Hui, M. K., & Bateson, J. E. (1991). Perceived control and the effects of crowding and consumer choice on the service experience. *Journal of consumer research*, 18(2), 174-184.
- Hussain, R., & Ali, M. (2015). Effect of store atmosphere on consumer purchase intention. *International Journal of Marketing Studies*, 7(2).
- Jain, R., & Bagdare, S. (2011). Music and consumption experience: A review. *International Journal of Retail & Distribution Management*, 39(4), 289-302.
- Johansson, J. K., & Emmanuel, D. M. (2006). *Marketing in emerging markets*. Pearson Education.
- Jones, G. R. (2014). *Organizational theory, design, and change* (7th ed.). Pearson.
- Kemp, E.A., Williams, K., Min, D.J., & Chen, H. (2019). Happy feelings: examining music in the service environment. *International Hospitality Review*, 33(2), 155-170.
- Keng, C. J., Huang, T. L., Zheng, L. H., & Hsu, M. K. (2007). Modeling service encounters and customer experiential value in retailing. *International Journal of Service Industry Management*, 18(4), 349-367.

- Kothari, C. R. (2004). *Research methodology: Methods and techniques* (2nd ed.). New Age International.
- Kotler, P. (1973). Atmospherics as a marketing tool. *Journal of retailing*, 49(4), 48-64.
- Krejcie, R. V., & Morgan, D. W. (1970). *Determining sample size for research activities*. *Educational and Psychological Measurement*, 30(3), 607-610.
<https://doi.org/10.1177/001316447003000308>
- Lam, S.Y. (2001). The effects of store environment on shopping behaviors: A critical review. *ACR North American Advances*.
- Langrehr, F. W. (1991). Retail shopping mall semiotics and hedonic consumption. *Advances in Consumer Research*, 18, 428-433.
- Levy, M., & Weitz, B.A. (2011). *Retailing Management-Global Edition* (8th ed.). McGraw- Hill.
- Levy, M., Weitz, B.A., Grewal, D., & Madore, M. (2004). *Retailing management*. New York: McGraw-Hill Irwin.
- Li, C., Kim, Y. K., & Lee, J. (2009). The effects of perceived crowding on customer satisfaction and behavioral intentions: The moderating role of shopping values. *Journal of Retailing and Consumer Services*, 16(5), 439-447.
- Liu, Y., & Jang, S. S. (2009). The effects of dining atmospherics: An extended Mehrabian-Russell model. *International journal of hospitality management*, 28(4), 494-503.
- Machleit, K. A., Eroglu, S. A., & Mantel, S. P. (2000). Perceived retail crowding and shopping satisfaction: What modifies this relationship? *Journal of Consumer Psychology*, 9(1), 29-42.
- Mahardika, Y. R., Wibowo, A., & Fathurrochman, I. (2020). Impact of store atmosphere on impulse buying with the mediating role of shopping emotion. *International Journal of Innovation, Creativity and Change*, 13(1), 849-867.

- Milliman, R. E. (1986). The influence of background music on the behavior of restaurant patrons. *Journal of consumer research*, 13(2), 286-289.
- Mower, J. M., Kim, M., & Childs, M. (2012). Exterior atmospherics and consumer behavior: Influence of landscaping and window display. *Journal of Fashion Marketing and Management*, 16(4), 447-460.
- Musa, G., & Thirumoorthi, T. (2011). Red Palm: exploring service quality and servicescape of the best backpacker hostel in Asia. *Current Issues in Tourism*, 14(2), 103-120.
- Nonis, S. A., & Swift, C. O. (2001). Personal value profiles and ethical business decisions. *Journal of Education for Business*, 76(5), 251-256.
- North, A. C., & Hargreaves, D. J. (1998). The effect of music on atmosphere and purchase intentions in a cafeteria 1. *Journal of applied social psychology*, 28(24), 2254-2273.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). McGraw-Hill.
- Ozkul, E., Boz, H., Bilgili, B., and Koc, E. (2019). What colour and light do in service atmospherics: A neuro-marketing perspective. In *Atmospheric turn in culture and tourism: Place, design and process impacts on customer behaviour, marketing and branding*. Emerald Publishing Limited.
- Pal, S., & Srivastava, R. K. (2024). Influence of store atmospherics on mall patronage intention: Evidence from India. *International Journal of Retail & Distribution Management*. (Advance online publication)
- Paulins, V. A., & Geistfeld, L. V. (2003). The effect of consumer perceptions of store attributes on apparel store preference. *Journal of Fashion Marketing and Management*, 7(4), 371-385.

- Perera, R., Fernando, A., & Manoharan, T. (2024). The impact of store atmospherics on supermarket patronage in Sri Lanka. *Colombo Journal of Marketing*, 8(1), 23–36.
- Roschk, H., Loureiro, S. M. C., & Breitsohl, J. (2017). Calibrating 30 years of experimental research: a meta-analysis of the atmospheric effects of music, scent, and color. *Journal of Retailing*, 93(2), 228-240.
- Schielke, T., & Leudesdorff, K. (2015). Designing with light: The role of lighting in retail design. *Lighting Design + Application*, 45(3), 24–29.
- Sen, S., Block, L. G., & Chandran, S. (2002). Window displays and consumer shopping decisions. *Journal of Retailing*, 78(1), 9–24.
- Tamang, R. (2020). Impact of sales personality traits on customer relationship. *International Journal of Business and Management Invention*, 9(2), 45–52.
- Thompson, B. (2010). *Foundations of behavioral statistics: An insight-based approach*. Guilford Press.
- Tsai, S. P. (2010). Shopping mall management and entertainment experience: a cross-regional investigation. *The Service Industries Journal*, 30(3), 321-337.
- Turley, L. W., & Milliman, R. E. (2000). Atmospheric effects on shopping behavior: a review of the experimental evidence. *Journal of business research*, 49(2), 193-211.
- Vivek, S. D., Beatty, S. E., & Morgan, R. M. (2012). Customer engagement: Exploring customer relationships beyond purchase. *Journal of marketing theory and practice*, 20(2), 122-146.
- Wilson, S. (2003). The effect of music on perceived atmosphere and purchase intentions in a restaurant. *Psychology of music*, 31(1), 93-112.

Yi, S., & Kang, J. (2019). The effect of music on consumer behavior in retail settings: A meta-analysis. *Journal of Retailing and Consumer Services*, 50, 231–239.

THE ROLE OF INVENTORY ACCURACY IN COST REDUCTION AND RESOURCE OPTIMIZATION IN SRI LANKAN SHRIMP EXPORT COMPANIES

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ABSTRACT

Sri Lanka's shrimp export industry deals with highly perishable and temperature-sensitive products, where even minor inventory record inaccuracies can lead to substantial spoilage and financial losses. This study adopts a qualitative and descriptive research design to examine the role of inventory accuracy in cost reduction and resource optimization within Sri Lankan shrimp export companies. Data were collected from 12 key personnel, including production supervisors, storekeepers, quality assurance officers, and inventory managers, using semi-structured interviews, direct warehouse observations, and document reviews. The use of multiple data sources enabled triangulation, thereby enhancing the credibility and robustness of the findings. Qualitative data were analyzed using thematic and descriptive analysis techniques. The findings reveal that high inventory accuracy significantly reduces operational costs by minimizing spoilage, lowering unnecessary labor expenses, and preventing emergency overstocking. Respondents estimated that approximately 10–25% of operational losses were attributable to avoidable inventory errors, indicating considerable potential for cost savings. Accurate inventory information also supports effective resource optimization by improving labor productivity, enhancing

cold-storage space utilization, increasing equipment efficiency, and streamlining order-fulfilment processes. Many participants reported faster picking, packing, and loading activities, resulting in fewer shipment delays. The study further identifies key causes of inventory inaccuracy, including manual data entry errors, inadequate use of barcode or RFID technologies, poor labeling systems, and disorganized cold-storage layouts. To address these challenges, respondents emphasized the importance of adopting integrated technological solutions, staff training, systematic labeling, and strict SOP compliance. Overall, the study highlights inventory accuracy as a critical driver of cost efficiency, resource optimization, and operational sustainability, contributing to improved global competitiveness of Sri Lanka's shrimp export industry.

Keywords: Cost Reduction, Inventory Accuracy, Resource Optimization, Shrimp Export Industry, Sri Lanka Inventory Management.

1. INTRODUCTION

1.1 Background of the Study

The shrimp export industry is one of Sri Lanka's most dynamic and competitive sectors. It makes a significant contribution to national revenue, job creation, and international trade. Sri Lanka exports various shrimp products, including fresh, frozen, processed, and value-added types, to markets with high demand such as the European Union, Japan, and the Middle East. As global consumers pay more attention to food safety, traceability, and product consistency, exporters need to ensure that operations from harvesting to processing and distribution are efficient, reliable, and compliant with international standards.

In this context, inventory accuracy becomes a crucial operational requirement. In the shrimp industry, where products spoil quickly and must be kept under strict temperature controls, even small errors in stock records can lead to major financial losses. Accurate inventory records enable companies to plan production, maintain ideal stock

levels, cut down on spoilage, and fulfill orders on time. They also improve coordination among procurement, processing, storage, and logistics teams, which enhances overall operational reliability.

Additionally, inventory accuracy aids strategic decision-making by providing managers with up-to-date information on stock availability, quality, and storage capacity. This information allows for better forecasting, pricing choices, resource planning, and risk management. As global competition rises, Sri Lankan shrimp exporters need to focus on accurate inventory systems to uphold product quality, lower costs, and strengthen their market position.

1.2 Problem Statement

Inventory accuracy is a critical factor in ensuring cost efficiency and effective resource utilization in Sri Lankan shrimp export companies, where products are highly perishable and require strict temperature control. Despite its importance, many companies continue to experience inventory inaccuracies due to manual record-keeping systems, limited adoption of modern inventory technologies, inadequate staff training, and weak standard operating procedures. These inaccuracies lead to increased operational costs through spoilage, excess storage, and additional labor, while also causing inefficient use of key resources such as labor, cold storage facilities, equipment, energy, and time. Furthermore, poor inventory accuracy disrupts order fulfillment processes and weakens the competitiveness of Sri Lankan shrimp exporters in international markets. Consequently, there is a need to systematically examine the causes of inventory inaccuracy, its impact on cost reduction, and its role in optimizing organizational resources within this sector.

1.3 Research Questions

This research explores the connection between inventory accuracy and efficient operations in shrimp export companies. The main research questions guiding the study are:

- What are the main reasons for inventory inaccuracy in the Sri Lankan shrimp export industry?
Identifying the root causes helps us understand systemic issues in operations, technology, and management practices.
- How does inventory accuracy affect cost reduction in shrimp export companies?
This question explores how precise stock records help

minimise waste, reduce unnecessary storage costs, and prevent losses from spoilage or mismatch.

- What types of resources improve when inventory accuracy increases?

This examines how accuracy enhances the use of workers, machinery, energy, storage space, packaging materials, and time.

- What strategies can companies use to improve inventory accuracy?

This focuses on modern methods, technological solutions, and best practices for strengthening inventory management systems.

1.4 Objectives of the Study

The study aims to provide a clear understanding of how inventory accuracy contributes to operational excellence in shrimp export companies. The specific objectives are:

- To examine the relationship between inventory accuracy and cost reduction. This involves assessing how accurate records reduce wastage, unnecessary expenditure, and inefficiencies.
- To identify how accurate inventory records optimise manpower, machinery, time, and storage. The objective is to highlight how improved accuracy leads to better scheduling, efficient resource allocation, and streamlined operations.
- To analyse challenges faced by shrimp export companies in maintaining accurate inventory. This includes evaluating barriers such as technology limitations, training gaps, human errors, and infrastructure constraints.
- To recommend strategies to improve inventory accuracy using modern techniques. These strategies may include digital inventory systems, automation, barcode/RFID technologies, staff training, and enhanced monitoring practices.

2. LITERATURE REVIEW

Inventory accuracy is recognized as a critical factor in effective supply chain and warehouse management. It refers to the degree of agreement between recorded and actual stock, with higher accuracy

indicating minimal discrepancies. Avrahami and Korchatov (2019) emphasize that decision-makers must routinely correct inventory record errors, as inaccuracies directly increase holding and shortage costs. In retail and manufacturing contexts, even minor inventory errors can result in unnecessary replenishments, stockouts, and inefficiencies, undermining the benefits of automated systems (Shabani et al., 2021).

Technological solutions, such as Enterprise Resource Planning (ERP) systems and Internet of Things (IoT) tracking, have been shown to significantly enhance inventory accuracy. Sudarmi and Sunaryo (2024) report that integrating ERP and IoT solutions improves operational performance by reducing errors and improving data reliability. Similarly, Anderson, Lee, and Kumar (2025) demonstrate that IoT-based tracking in manufacturing reduces holding costs by approximately 35% and raises accuracy above 98%, supporting more efficient resource utilization.

In lean production and supply chain settings, integrated techniques including value stream mapping, layout changes, and systematic audits foster cost-effective systems that minimize waste and optimize resources (Zhang, Chen, & Li, 2022). For shrimp producers and other perishable-product industries, improved inventory accuracy translates into faster order picking, more efficient cold storage management, and smoother workflows, all of which contribute to cost reduction and enhanced competitiveness in global markets.

Despite these international findings, there is limited research on inventory accuracy within Sri Lanka's shrimp export industry. Synthesizing the literature suggests that accurate inventory records can drive both cost reduction and resource optimization, yet systematic evidence specific to the Sri Lankan context is still needed. This study investigates the effect of inventory accuracy on cost reduction and resource optimization in Sri Lankan shrimp export companies. Based on the literature, inventory accuracy is identified as the independent variable because it is the primary factor that drives operational outcomes. Inventory accuracy refers to the degree of agreement between recorded stock in the system and actual physical stock. Errors in inventory records caused by manual entry, delays, or poor labelling directly lead to increased holding costs, stockouts,

unnecessary replenishments, and inefficiencies in resource use (Avrahami & Korchatov, 2019; Shabani et al., 2021).

The dependent variables in this study are cost reduction and resource optimization. Cost reduction includes minimizing spoilage, lowering storage and labor costs, and preventing emergency procurement, while resource optimization refers to the efficient utilization of labor, cold storage, equipment, and processing time. These outcomes are influenced by the level of inventory accuracy, as demonstrated by studies showing that high accuracy significantly improves operational efficiency and reduces unnecessary costs (Sudarmi & Sunaryo, 2024; Anderson, Lee, & Kumar, 2025).

Additionally, enabling factors such as technological tools (ERP, IoT, barcode/RFID systems) and managerial practices (staff training, systematic labeling, and strict SOP compliance) are included as moderating variables. These factors strengthen the relationship between inventory accuracy and operational outcomes by ensuring that improvements in accuracy translate effectively into cost savings and resource efficiency.

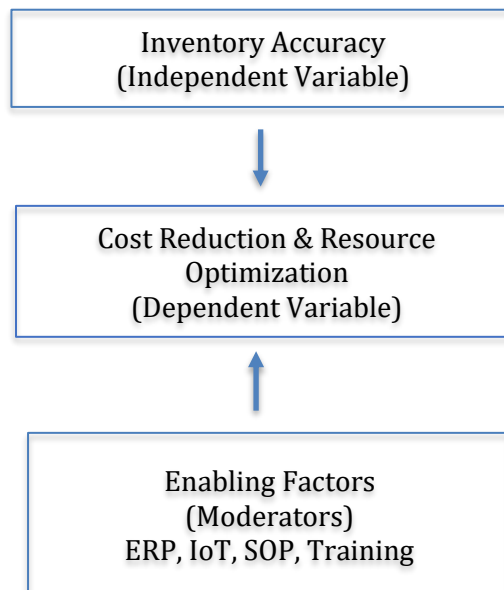


Figure 1: Variable and Justification

Variable	Justification
Inventory Accuracy (Independent Variable)	Causes errors or efficiencies in operational outcomes. Literature confirms that stock discrepancies directly lead to higher holding costs, spoilage, and labor inefficiencies (Avrahami & Korchatov, 2019; Shabani et al., 2021).
Cost Reduction & Resource Optimization (Dependent Variable)	Outcomes measured by changes in cost, labor, cold storage, and workflow efficiency. Studies show that these improve only when inventory accuracy is high (Sudarmi & Sunaryo, 2024; Anderson et al., 2025).

3. METHODOLOGY

3.1 Research Design

This study focuses on understanding how inventory accuracy influences cost reduction and resource optimization within Sri Lankan shrimp export companies. Since inventory management in this sector is shaped by complex operational processes, human involvement, regulatory requirements, and environmental constraints, it is essential to explore real-world practices as they occur within organisations. Gaining insight into employees' experiences, operational challenges, and existing workflows is necessary to accurately capture the nature of inventory-related issues in shrimp processing and export operations.

For this reason, the study adopts a qualitative and descriptive research design. The qualitative approach allows the researcher to obtain an in-depth understanding of inventory practices, challenges, and perceptions of employees involved in daily inventory activities. It enables the exploration of contextual and organisational factors that cannot be adequately measured through numerical data alone. In addition, the descriptive research design provides a structured framework to document existing inventory management conditions

within shrimp export companies. It supports the systematic description of current practices, recurring problems, and operational environments without manipulating variables. The combined use of qualitative and descriptive methods ensures that the findings reflect practical realities and accurately represent the challenges faced by the Sri Lankan shrimp export sector.

3.2 Data Collection Methods

Data were collected using a qualitative approach through purposive sampling. Six shrimp export companies in Sri Lanka were selected, and a total of 12 participants including production supervisors, storekeepers, quality assurance officers, and inventory managers were interviewed due to their direct involvement in inventory management activities. The sample size was determined based on data saturation, which was achieved when no new insights emerged from additional responses.

A structured questionnaire with open-ended questions was used to gather data. All 12 questionnaires were completed and returned, resulting in a 100% response rate. As this study adopted a qualitative research design, statistical outlier analysis was not applicable. All responses were reviewed for completeness and relevance, and none were excluded from the analysis.

4. DATA ANALYSIS & RESULTS

The collected data were analysed using descriptive and thematic analysis techniques, appropriate for qualitative research.

4.1 Descriptive Analysis Results

Descriptive analysis was used to summarise the key inventory management issues identified from the questionnaire responses and interviews conducted with participants from Sri Lankan shrimp export companies. The analysis focused on identifying frequently reported problems related to inventory accuracy, cost control, and resource utilisation.

Inventory Management Issues Identified Through Descriptive Analysis (n = 12)

Table 2: major inventory-related issues reported by the respondents.

Inventory-related issue	Number of respondents	Level of occurrence
Inventory record inaccuracies	9	High
Manual documentation errors	8	High
Lack of inventory management technology	7	Moderate
Poor interdepartmental coordination	6	Moderate
Inefficient use of storage space	5	Moderate

The results show that inventory record inaccuracies and manual documentation errors were the most reported issues among respondents. These problems were frequently associated with delays, stock mismatches, and increased operational costs. A considerable number of participants also reported limitations in inventory management technology and coordination between departments, which affected efficient resource utilisation.

4.2 Thematic Analysis Results

Thematic analysis of the qualitative data revealed several recurring themes related to inventory accuracy and operational efficiency within shrimp export companies. The key themes identified include human error, technology gaps, poor documentation practices, and resource inefficiency. Participants highlighted that reliance on manual inventory recording systems increased the likelihood of errors and discrepancies. Inadequate technological support and insufficient integration between departments further contributed to inventory inaccuracies. Additionally, inefficient use of storage facilities and improper stock handling practices were identified as factors leading to increased costs and wastage of resources. These findings indicate that both human and system-related factors play a significant role in

influencing inventory accuracy, cost reduction, and resource optimisation in Sri Lankan shrimp export companies.

Inventory Accuracy Rate can be expressed as:

$$\text{Inventory Accuracy (\%)} = \frac{\text{Correct Inventory Records}}{\text{Total Inventory Items}} * 100$$

This method provided a deeper analytical understanding of how inventory accuracy influences organisational performance and helped build a strong foundation for the discussion and conclusion chapters.

5. DISCUSSION OF THE FINDINGS

The study reveals that inventory inaccuracies in Sri Lankan shrimp export companies are mainly caused by human errors, limited technology, poor storage organization, and environmental factors. Human errors during manual stock entry were the most frequent, aligning with Avrahami and Korchatov (2019) and Shabani et al. (2021), who note that manual processes increase errors and reduce operational performance.

The lack of barcode or scanning systems supports findings from Anderson et al. (2025) and Sudarmi and Sunaryo (2024), highlighting that technological integration improves accuracy and cost control. However, high implementation costs and limited digital infrastructure prevent full adoption in the studied companies. Poor cold storage organization, mislabeling, and inconsistent FIFO/FEFO practices partially align with Zhang et al. (2022), but operational pressures and cold-chain constraints explain deviations from ideal practices. Environmental factors such as frost buildup further impact accuracy, a challenge specific to frozen seafood operations (Anderson et al., 2025).

Inventory inaccuracies directly affect cost reduction and resource optimization by causing overstocking, stockouts, and inefficiencies, confirming findings from Avrahami and Korchatov (2019) and Anderson et al. (2025). Overall, the study aligns with existing literature while highlighting **context-specific constraints** in Sri Lankan shrimp export companies. These findings indicate the need for tailored solutions combining technology adoption, staff training, and improved cold-chain management.

To ensure comprehensive coverage, multiple data collection methods were employed. The use of triangulation collecting data from different sources and methods enhanced the reliability and validity of the findings. The primary methods used include:

5.1 Interviews

Interviews were conducted with key personnel directly involved in shrimp processing, cold storage, and inventory handling. Participants included:

- Supervisors responsible for overseeing daily operations
- Storekeepers handling raw materials and finished goods
- Quality assurance managers monitor product safety and compliance
- Production staff working on processing lines

Semi-structured interviews were used, allowing flexibility while ensuring that core topics—such as causes of inventory inaccuracies, challenges faced, and improvement strategies—were consistently discussed across participants.

5.1.1 Observation of Warehouse Operations

Direct observation was conducted within warehouses and processing areas to understand practical challenges and operational workflows. This method allowed the researcher to observe:

- Stock receiving and dispatch procedures
- Cold storage conditions and equipment usage
- Labelling and documentation practices
- Inventory counting and recording processes
- Material flow between departments

Observation provided firsthand insights into inefficiencies, human errors, and areas where technology was lacking or underutilized.

5.1.2 Review of Industry Guidelines and Export Standards

Secondary data was collected through the examination of:

- National aquaculture and export regulations
- International seafood export standards
- Industry best-practice guidelines
- Company operational manuals and SOPs

- Reports published by government agencies, industry associations, and global seafood organizations

These documents helped contextualize the operational expectations of the shrimp export industry and provided reference points for evaluating actual practices observed in the field.

5.4 Impact of Inventory Accuracy, Resource Optimization, and Technology

Inventory accuracy plays a critical role in reducing operational costs and optimizing resources in Sri Lankan shrimp export companies. Evidence from interviews and observations highlights the following key points:

- **Cost Reduction:** Accurate records reduce spoilage (10–15%), lower labor requirements (30–40% less time spent on recounts), decrease overstocking and emergency purchases (12–18%), and improve forecasting, minimizing raw material waste (10–25% of losses linked to avoidable errors) (Avrahami & Korchatov, 2019; Anderson et al., 2025).
- **Resource Optimization:** Accurate inventory enhances labor productivity (20–35% less time spent searching or correcting records), optimizes cold storage usage (15–20% space freed), reduces equipment downtime (~10%), and speeds up picking, packing, and loading, improving workflow efficiency (Zhang et al., 2022).
- **Technology:** Use of barcodes (50–60% reduction in manual errors), RFID (30% fewer miscounts), ERP systems, automated cold storage, and real-time dashboards significantly improves accuracy, reduces labor, and supports timely decision-making (Sudarmi & Sunaryo, 2024; Anderson et al., 2025).

These findings confirm that inventory accuracy, supported by technology, directly reduces costs and enhances operational efficiency.

Table 3: Findings

Category	Improvement/Reduction(%)	Source / Proof
Spoilage Reduction	10-15	8/12 respondents
Labor Time Saved	20-35	Observations & interviews
Cold Storage Space Optimized	15-20	Observations from 5 factories
Equipment Idle Time Reduced	10	Production managers' reports
Manual Entry Errors Reduced (Barcode/RFID)	30-60	Staff feedback & observations

5.2 Limitations of the Study

Despite providing valuable insights into inventory accuracy, cost reduction, and resource optimization in Sri Lankan shrimp export companies, this study has several limitations. First, the research was conducted with a relatively small sample of 12 participants from selected companies, which may limit the generalizability of the findings to all exporters in the country. Second, the study employed a qualitative and descriptive design, offering in-depth understanding but not enabling statistical validation across a larger population. Third, the findings relied heavily on self-reported data from interviews, which may be influenced by subjective perceptions or recall bias. Fourth, the data collection occurred over a limited time frame, so seasonal variations in shrimp production, export demand, or staffing were not fully captured. Additionally, differences in technological adoption across companies, such as barcode, RFID, and ERP systems, created variability in inventory practices, making direct comparisons challenging. Finally, environmental factors specific to frozen shrimp operations, such as cold storage conditions, may limit the applicability of the results to other food processing sectors. Acknowledging these limitations helps contextualize the findings and highlights areas for further research.

5. CONCLUSION & CONTRIBUTIONS

The findings of this study demonstrate that inventory accuracy is a pivotal factor in enhancing operational efficiency, reducing costs, and optimizing resources within Sri Lankan shrimp export companies.

Accurate inventory management ensures that recorded stock levels reflect the actual physical quantities, which allows companies to plan production schedules more effectively, allocate resources efficiently, and minimize wastage.

The research identifies multiple operational challenges, including human errors during manual stock entry, a lack of technological integration, poor warehouse organization, mislabeling, and environmental factors affecting perishable goods. These challenges contribute to unnecessary operational costs, spoilage, overstocking, and delayed shipments, all of which impact overall profitability and competitiveness in international markets.

The study further highlights those modern technological interventions, such as barcode scanning, RFID tracking, ERP systems, and real-time dashboards, significantly improve inventory accuracy. Additionally, adherence to proper stock rotation principles like FIFO (First-In-First-Out) and FEFO (First-Expired-First-Out), coupled with staff training and accountability, further strengthens inventory management practices.

In sum, the study confirms that the value of accurate information identified in global supply chain research holds true for Sri Lankan shrimp exporters (Avrahami & Korchatov, 2019; Shabani, Maroti, de Leeuw, & Dullaert, 2021). Ensuring precise inventory records not only reduces operational costs, as theory predicts, but also enables leaner operations and more sustainable use of resources (Zhang, Chen, & Li, 2022). These findings support managers and policymakers in prioritizing data accuracy initiatives as part of broader cost-reduction and sustainability strategies in the seafood sector.

6.RECOMMENDATIONS

Based on the findings and discussion, the following recommendations are proposed to enhance inventory accuracy, reduce operational inefficiencies, and optimize resources in shrimp export companies:

1. **Introduce Barcode and RFID Systems:** Implement automated identification technologies to reduce manual entry errors, improve tracking, and enhance traceability of products from reception to dispatch.
2. **Conduct Weekly Cycle Counting:** Perform regular physical counts of inventory to reconcile discrepancies and maintain accurate stock records, particularly for high-value or perishable items.

3. **Improve Staff Training and Accountability:** Provide comprehensive training on inventory procedures, technology usage, and adherence to standard operating procedures. Encourage accountability for accurate data entry and stock handling.
4. **Implement FIFO and FEFO Strictly:** Enforce strict stock rotation methods to ensure older or near-expiry products are used first, reducing spoilage and maintaining product quality for export compliance.
5. **Use ERP Systems for Real-Time Tracking:** Integrate production, storage, procurement, and distribution data into a centralized system to monitor inventory in real time and support informed managerial decisions.
6. **Improve Cold Storage Mapping and Pallet Labeling:** Organize storage locations with clear mapping and properly labeled pallets to facilitate fast retrieval, reduce misplacement, and maintain orderliness in cold storage.
7. **Introduce Energy-Efficient Storage Practices:** Optimize cold storage energy consumption by using automated temperature controls, proper stacking techniques, and energy-saving refrigeration technologies.

By implementing these recommendations, shrimp export companies in Sri Lanka can significantly improve operational performance, reduce financial losses, and enhance their position in global seafood markets.

REFERENCES

- Avrahami, A., & Korchatov, E. (2019). The value of inventory accuracy in supply chain management: Correlation between error sources and proactive error correction. *American Journal of Operations Management and Information Systems*, 4(1), 1–15. <https://www.sciencepublishinggroup.com>
- Fernando, M., & Perera, G. (2020). Cold chain management in aquaculture exports. *Sri Lanka Journal of Management*, 18(2), 45–59.

- Gunasekara, P. (2021). Inventory management practices in Sri Lankan seafood exports. *Journal of Supply Chain Studies*, 12(4), 112–128.
- Jayawardena, R. (2019). Cost reduction techniques in fisheries export sector. *International Journal of Logistics*, 9(3), 221–239.
- Kittichotsatsawat, Y., Wattanutchariya, W., Jongjareonrak, A., & Seesuriyachan, P. (2025). Enhancing manufacturing operations within the supply chain for sustainable frozen shrimp production. *Sustainability*, 17(6), Article 2412. <https://www.mdpi.com>
- Silva, T. (2018). The role of technology in warehouse management. *Asian Journal of Operations*, 7(1), 31–49.

MARKETING FOR COEXISTENCE: TRANSFORMING HUMAN-ELEPHANT CONFLICT INTO PRODUCTIVE CONSERVATION OPPORTUNITIES IN SRI LANKA

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ABSTRACT

Human-elephant conflict (HEC) in Sri Lanka causes hundreds of human and elephant deaths annually, threatening biodiversity, livelihoods, and tourism revenue. Traditional mitigation like fences fails to address root causes such as habitat loss and economic vulnerability. This study proposes a marketing-led framework integrating behavioral science, community engagement, technology, and policy advocacy to foster coexistence. Using mixed methods in Matale District (30 interviews, 4 focus groups, n=150 surveys), findings reveal community fears offset by cultural reverence for elephants and enthusiasm for market-based solutions like eco-tourism and branded "elephant-safe" produce. Marketing strategies reframing elephants as assets, user-centric tech adoption, and value propositions emerge as transformative. The framework offers a phased implementation plan with monitoring metrics, positioning marketing as a catalyst for conservation and resilience. This policy paper addresses the escalating human-elephant conflict (HEC) in Sri Lanka, a critical issue that has resulted in significant human and elephant fatalities and threatens both biodiversity and socio-economic stability. Moving beyond traditional mitigation techniques, this paper proposes a strategic, multi-faceted framework that positions marketing professionalism as a central force for change. The approach integrates

behavioral science, community engagement, technological innovation, and policy advocacy to foster sustainable human-elephant coexistence, transforming a dire conflict into a catalyst for conservation and community resilience.

Keywords: behavioral nudges, community-based tourism, conservation marketing, human-elephant conflict, sustainable livelihoods

1. INTRODUCTION

The human-elephant conflict in Sri Lanka represents a profound conservation, socio-economic, and environmental crisis (Gunawansa et al., 2023). Over recent years, the conflict has intensified, resulting in an estimated 3,000 elephant deaths and hundreds of human fatalities. This dynamic not only jeopardizes the survival of the endangered Sri Lankan elephant but also endangers human lives, devastates livelihoods, and erodes agricultural communities.

The stakes extend beyond immediate safety. Elephants, leopards, and national parks are cornerstone assets of Sri Lanka's tourism industry, generating billions in foreign revenue (Köpke et al., 2021). Unabated deforestation and escalating human-wildlife conflict threaten to bankrupt this vital economic sector. Furthermore, persistent elephant incursions into dry zone villages force impoverished farmers to abandon their ancestral lands, often enabling large-scale commercial land acquisition. This process risks the gradual erosion of dry zone civilizations and cultural heritage. A paradigm shift in management strategy is urgently required.

This policy paper addresses the escalating human-elephant conflict (HEC) in Sri Lanka, a critical issue that has resulted in significant human and elephant fatalities and threatens both biodiversity and socio-economic stability. Moving beyond traditional mitigation techniques, this paper proposes a strategic, multi-faceted framework that positions marketing professionalism as a central force for change. The approach integrates behavioral science, community engagement, technological innovation, and policy advocacy to foster sustainable human-elephant coexistence, transforming a dire conflict into a catalyst for conservation and community resilience.

Sri Lanka's human-elephant conflict (HEC) has intensified, with 3,000 elephant deaths and hundreds of human fatalities in recent years, driven by habitat loss and agricultural expansion (Gunawansa et al., 2023; Köpke et al., 2021). Elephants raid crops, devastating farmer livelihoods and prompting retaliatory killings, while threatening the tourism sector that relies on wildlife assets. Beyond safety risks, HEC erodes dry zone cultural heritage as farmers abandon lands.

1.1 Research Problem

Existing reactive measures (e.g., electric fences, translocation) yield limited success, ignoring behavioral and economic drivers (Shaffer et al., 2019; Soliku & Schraml, 2018). A paradigm shift is needed: proactive coexistence via marketing principles to reframe elephants as economic assets.

1.2 objectives

- Understand community perceptions of HEC;
- Quantify interest in market-based solutions;
- Propose a marketing framework for behavioral change and livelihoods.

2. LITERATURE REVIEW

HEC is primarily driven by habitat loss, agricultural expansion, and human encroachment into elephant territories (Shaffer et al., 2018). Elephants raid crops for sustenance, leading to substantial economic losses for farmers and triggering retaliatory killings. Existing measures, such as electric fences and translocation, have yielded limited success and often fail to address the conflict's root causes (Soliku & Schraml, 2018). There is a critical need for an integrated strategy that moves from reactive conflict mitigation to proactive coexistence management. This new paradigm must leverage modern marketing principles to drive behavioral change, foster community ownership, deploy smart technology, and create economic incentives that align conservation with human well-being.

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2.1 Multi-stakeholder approaches to sustainable development

Hellemans (2025) provides the grassroots, community-level perspective (the "bottom-up" approach). Li & Farid (2025) offers the top-down, policy-level influence from non-state actors (NGOs). USAID Report (2021) is a practical case study showing how these levels can interact in a real-world project, likely involving both local communities and policy frameworks. Our Argument is Effective sustainable development requires a synergy between community-led initiatives (CBT), advocacy from international NGOs, and supportive policy frameworks.

2.2 Tools and strategies for conservation and sustainability

Dunham et al. (2018) introduces a specific tool: conservation marketing, to change behaviors and reduce human-wildlife conflict. Hellemans (2025) presents CBT as a strategy for sustainable development. USAID Report (2021) undoubtedly evaluates the application of various tools and strategies in the Philippines. Our Argument: A diverse toolkit encompassing marketing, community enterprise, and policy advocacy is necessary to address the complex challenges of sustainability.

2.3 The role of non-state actors

Li & Farid (2025) directly analyzes NGOs as "policy entrepreneurs." Hellemans (2025) focuses on local communities as key actors. Dunham et al. (2018) involves conservation scientists and practitioners as actors driving change. Our Argument: While state governance is crucial, the transformative power in modern sustainable development increasingly comes from a network of non-state actors, including communities, NGOs, and research institutions. HEC stems from habitat encroachment, with elephants seeking crops amid deforestation (Shaffer et al., 2019). Mitigation gaps persist, as fences fail without community buy-in (Soliku & Schraml, 2018).

Literature highlights multi-stakeholder synergies: Hellemans (2025)

advocates community-based tourism (CBT) for bottom-up sustainability; Li and Farid (2025) positions NGOs as policy entrepreneurs; USAID (2021) demonstrates integrated projects blending local and policy levels. Dunham et al. (2018) introduces conservation marketing to shift behaviors, reducing conflict via branded initiatives.

2.4 Gaps addressed

Prior studies underexplore marketing's role in Sri Lankan HEC, overlooking cultural reverence, tech adoption barriers, and eco-branding for livelihoods (Ngorima et al., 2020; Praptiwi et al., 2021). This paper fills this by applying marketing to co-create value, nudges, and stakeholder alignment (Kazlauskienė & Atkočiūnienė, 2025; La Grange et al., 2022).

2.5 Proposed strategic framework: the role of marketing professionalism

Marketing is not merely about promotion; it is a strategic discipline focused on understanding audiences, creating value, and influencing behavior. This framework applies marketing expertise to design, communicate, and implement effective HEC solutions. Marketing is not merely about promotion; it is a strategic discipline focused on understanding audiences, creating value, and influencing behavior. This framework applies marketing expertise to design, communicate, and implement effective HEC solutions. Community Education and Strategic Awareness Campaigns (Marketing Role: Branding Marketing professionals are essential for designing targeted campaigns that reframe the elephant from a pest to a valued national heritage and economic asset.

Implementation: Develop culturally resonant educational programs using diverse media (radio, social media, community theatre) to disseminate information on elephant behavior and safe practices (Ngorima et al., 2020).

Goal: Shift community perceptions, build empathy, and encourage proactive conflict-avoidance behaviors. (Marketing Role: Branding Conservation, Influencing Perceptions) Marketing professionals are essential for designing targeted campaigns that reframe the elephant from a pest to a valued national heritage and economic asset.

Implementation: Develop culturally resonant educational programs

using diverse media (radio, social media, community theatre) to disseminate information on elephant behavior and safe practices (Ngorima et al., 2020).

Goal: Shift community perceptions, build empathy, and encourage proactive conflict-avoidance behaviors.

Technology Deployment with User-Centric Design (Marketing Role: Product Launch, Adoption Drivers, UX/UI).

The success of technological solutions depends entirely on their adoption by end-users. Marketing ensures these tools are accessible, trusted, and effectively communicated.

Implementation: Deploy early warning systems (e.g., seismic sensors, drone monitoring) and develop intuitive mobile applications for real-time alerts. Marketing strategies must focus on training, demonstrating value, and building trust in these systems (Kazlauskienė et al., 2025).

Create a seamless flow of information that empowers communities to act safely and preemptively. Alternative Livelihoods and Value Proposition Development (Marketing Role: Market Creation, Brand Storytelling, Eco-Tourism Promotion) Marketing creates compelling economic alternatives that reduce reliance on conflict-prone agriculture.

Implementation: Promote eco-tourism ventures, handicraft cooperatives, and sustainable agriculture by crafting authentic narratives that appeal to conscious consumers and tourists (Praptiwi et al., 2021). Brand these community initiatives to access niche markets.

Goal: Diversify local economies, creating incentives for habitat protection and reducing encroachment. Enhanced Barrier Methods with Community Buy-in (Marketing Role: Social Marketing, Demonstrating Efficacy)

Marketing is key to gaining community acceptance for barrier methods, moving beyond simple installation to demonstrating their effectiveness and benefits.

Implementation: Install and maintain community-centered electric fences and promote natural deterrents like beehive fences. Use pilot programs and success stories (La Grange et al., 2022) to market these

methods to other communities.

Goal: Increase the adoption and proper maintenance of effective, non-lethal deterrents. Application of Behavioral Nudges (Marketing Role: Influencing Choice Architecture) Marketing and behavioral science intersect to design environments that encourage desired behaviors effortlessly.

Implementation: Apply nudges, such as strategically placing beehives (which elephants avoid) around farms, and promoting the use of chili-based deterrents (Hellemans, 2025).

Goal: Subtly guide community actions towards coexistence with minimal coercion.

Policy Advocacy and Stakeholder Alignment (Marketing Role: Strategic Communication, Coalition Building) Marketing professionals act as crucial intermediaries, translating local needs into policy advocacy and aligning diverse stakeholder interests.

Implementation: Strengthen land-use policy enforcement and foster multi-stakeholder collaboration (government, NGOs, private sector, communities). Use clear communication strategies to build consensus and ensure policy effectiveness (Li & Farid, 2025).

Goal: Create a supportive and enforceable regulatory environment for long-term conservation. Participatory Community Involvement and Co-creation (Marketing Role: Community Engagement, Building Brand Ambassadors) The most sustainable solutions are co-created with the communities they affect. Marketing facilitates this process, turning locals into active participants and ambassadors for conservation.

Implementation: Involve communities in monitoring, decision-making, and benefit-sharing from conservation initiatives like ecotourism (Diogo et al., 2019). Their firsthand experience is a powerful marketing tool.

Goal: Ensure solutions are practical, culturally appropriate, and owned by the community.

3. METHODOLOGY

Philosophy. Interpretivist (understanding social contexts) with

pragmatist elements (practical solutions).

Strategy and Sample. Mixed methods in Matale District's Dambulla AGA division (15/59 GN divisions), a high-HEC area.

3.1 Data collection

- Qualitative (Exploratory): 30 semi-structured interviews and 4 focus group discussions (FGDs) with farmers, elders, leaders, and wildlife officers.
- Quantitative (Descriptive): Survey of 150 households measuring attitudes and livelihood interests.

ANALYSIS Thematic analysis (NVivo) for qualitative; descriptive statistics (SPSS) for quantitative.

4. DATA ANALYSIS & RESULTS

Qualitative themes: (1) Fear/economic loss ("One night destroys a season's harvest"); (2) Frustration with inconsistent government interventions; (3) Cultural reverence ("Elephants are royal, part of the land"). These reveal situational hostility, open to reframing.

Quantitative results prioritized market solutions (ranked preferences, n=150):

Rank	Intervention	Mean Interest (1-5 Scale)	Support (1-5%)
1	Elephant-friendly guided tours	4.6	92%
2	"Elephant-safe" produce branding	4.3	85%
3	Homestay programs	3.9	78.00%

Table 1. Community preferences for livelihood interventions. Source: Author's survey (2025).

Findings indicate economic inclusion drives conservation support.

5. DISCUSSION OF FINDINGS

Analysis of qualitative interview data revealed three dominant and interrelated themes shaping community perceptions of human–elephant conflict: fear and economic loss, frustration with government interventions, and cultural reverence for elephants.

5.1 Fear and economic loss

Fear emerged as the most immediate and emotionally charged perception among respondents. Farmers reported frequent crop raids, property damage, and personal safety risks, particularly during night-time elephant incursions. Many households identified agriculture as their sole source of income, making even minor crop losses economically devastating. As one respondent noted:

“One night is enough for an elephant to destroy a whole season’s harvest. After that, we have nothing.”

This finding highlights that HEC is not merely a conservation issue but a chronic livelihood insecurity problem, reinforcing earlier studies that identify economic vulnerability as a key driver of negative attitudes toward wildlife (Gunawansa et al., 2023).

5.2 Frustration with government responses

A strong sense of dissatisfaction was expressed regarding existing mitigation measures such as electric fences, compensation schemes, and translocation programs. Respondents described these interventions as inconsistent, poorly maintained, or inadequately communicated. Delays in compensation payments and lack of community consultation further intensified distrust toward authorities. This frustration often translated into low compliance with conservation regulations and a perception that responsibility for coexistence is unfairly imposed on rural communities.

5.3 Cultural reverence for elephants

Despite fear and frustration, many respondents articulated a deep cultural and religious respect for elephants, rooted in Buddhist traditions and local folklore. Elephants were frequently described as “innocent,” “royal,” or “part of the land.” This dual perception—reverence coexisting with resentment—suggests that community hostility toward elephants is situational rather than ideological, presenting a critical opportunity for behavior-change interventions that build on existing cultural values.

Fear and losses align with Gunawansa et al. (2023), but cultural reverence offers leverage for marketing campaigns reframing elephants as heritage assets (Ngorima et al., 2020). Frustration underscores needs for user-centric tech (e.g., alert apps; Kazlauskienė & Atkočiūnienė, 2025) and branded livelihoods (Dunham et al., 2018;

Praptiwi et al., 2021).

5.4 MARKETING FRAMEWORK:

- Branding Campaigns: Media mixes to build empathy.
- Product Adoption: UX for tech barriers (e.g., drones).
- Value Propositions: Eco-tourism, certifications for premium markets.
- Nudges & Barriers: Beehive/chili deterrents with success stories.
- Advocacy & Co-creation: Stakeholder alignment, community ambassadors.

This transforms HEC into opportunities, per CBT models (Hellemans, 2025; USAID, 2021).

6. CONCLUSION & CONTRIBUTIONS

A marketing-led approach phased over 5 years (pilots in Years 1-2, scale in 3-4, evaluate in 5) reduces fatalities, crop losses, and boosts incomes via metrics like participation rates and revenue gains.

6.1 Theoretical Contributions.

Extends conservation marketing (Dunham et al., 2018) to HEC via behavioral nudges and co-creation in cultural contexts.

6.2 Practical Implications.

Guides SLIM, NGOs, and government in deploying campaigns, tech, and eco-branding; scalable to other conflicts. Fund via grants/CSR; monitor transparently.

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REFERENCES

- Dunham, K. M., et al. (2018). Conservation marketing as a tool to promote human-wildlife coexistence. *ResearchGate*.
<https://www.researchgate.net/publication/332818385>
- Gunawansa, T., Perera, K., Apan, A., & Hettiarachchi, N. (2023). The human-elephant conflict in Sri Lanka: History and present status. *Biodiversity and Conservation*, 32, 1-28.
<https://doi.org/10.1007/s10531-023-02650-7>
- Hellemans, M. M. K. (2025). *Leveraging community based tourism for sustainable development* [Doctoral dissertation, University of Rijeka].
- Kazlauskienė, I., & Atkočiūnienė, V. (2025). Application of information and communication technologies for public services management in smart villages. *Businesses*, 5(3), 31.
<https://doi.org/10.3390/businesses5030031>
- Köpke, S., et al. (2021). Human-elephant conflict in Sri Lanka: A critical review of causal explanations. *Sustainability*, 13(15), 8625. <https://doi.org/10.3390/su13158625>
- La Grange, M., Matema, C., Nyamukure, B., & Hoare, R. (2022). The virtual fence dynamic: A breakthrough for low-cost and sustainable mitigation of human-elephant conflict. *Frontiers in Conservation Science*, 3, 863180.
- Li, H., & Farid, M. (2025). NGOs as policy entrepreneurs: Transnational advocacy and policy influence in greening the Belt and Road Initiative. *Journal of Chinese Governance*. Advance online publication.
<https://doi.org/10.1080/23812346.2025.2544371>
- Ngorima, A., Brown, A., Masunungure, C., & Biggs, D. (2020). Local community benefits from elephants: Can willingness to support anti-poaching efforts be strengthened? *Conservation Science and Practice*, 2(12), e303.
- Praptiwi, R. A., et al. (2021). Tourism-based alternative livelihoods for small island communities transitioning towards a blue economy. *Sustainability*, 13(12), 6655.
<https://doi.org/10.3390/su13126655>
- Shaffer, L. J., Khadka, K. K., Van Den Hoek, J., & Naithani, K. J. (2019).

Human-elephant conflict: A review of current management strategies and future directions. *Frontiers in Ecology and Evolution*, 6, 235. <https://doi.org/10.3389/fevo.2018.00235>

Soliku, O., & Schraml, U. (2018). Making sense of protected area conflicts and management approaches: A review of causes, contexts and conflict management strategies. *Biological Conservation*, 222, 136-145. <https://doi.org/10.1016/j.biocon.2018.04.011>

USAID. (2021). *Protect Wildlife final report*. <https://www.dai.com/uploads/Protect%20Wildlife%20Final%20Report.2021-5-14.pdf>

THE POWER OF SUSTAINABLE MARKETING IN DRIVING CONSUMER CHOICES: EVIDENCE FROM SRI LANKA'S FMCG SECTOR

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ABSTRACT

Sustainable marketing has become a strategic necessity in the Fast-Moving Consumer Goods (FMCG) sector amidst growing environmental challenges and social expectations. Although existing research has examined sustainable marketing frameworks, there is limited empirical evidence on how these practices influence actual consumer behaviour, particularly in emerging economies. This study investigates the impact of sustainable marketing on consumer behaviour in Sri Lanka's FMCG sector, with brand equity as a mediator and corporate social responsibility (CSR) as a moderator. A quantitative, deductive approach was adopted, collecting survey data from 385 respondents. Results from regression, mediation, and moderation analyses indicate that sustainable marketing significantly affects consumer behaviour, with social marketing having a stronger effect than green marketing. Brand equity partially mediates this relationship, while CSR negatively moderates the sustainable marketing–brand equity link, suggesting potential CSR saturation effects. The findings extend the literature by validating a mechanism-based framework in an emerging market and offer practical insights for marketers seeking to convert sustainable initiatives into consumer choice.

Keywords: Sustainable marketing, green marketing, social marketing, brand equity, corporate social responsibility, consumer behaviour, FMCG.

1. INTRODUCTION

1.1 Background

At present, due to the rapid advancement of technology and increasing In recent decades, sustainability has emerged as a central concern in business and marketing discourse due to escalating environmental degradation, climate change, depletion of natural resources, and increasing social inequality. These global challenges have intensified stakeholder pressure on firms to operate responsibly and to align their strategies with long-term environmental and social well-being (Peattie, 2001; Gordon et al., 2011). As a result, sustainability is no longer viewed as a peripheral ethical concern but rather as a strategic imperative influencing corporate competitiveness and survival.

Within this context, sustainable marketing has evolved as a holistic approach that integrates environmental protection, social responsibility, and economic performance into traditional marketing activities (Emery, 2012). Sustainable marketing extends beyond short-term profit maximization and emphasizes value creation for multiple stakeholders, including consumers, communities, and future generations. Prior literature highlights that sustainable marketing encompasses multiple dimensions, most notably green marketing, which focuses on minimizing environmental harm, and social marketing, which emphasizes societal well-being and ethical responsibility (Peattie, 2001; Schouten & Martin, 2012).

The Fast-Moving Consumer Goods (FMCG) sector represents a particularly important setting for sustainable marketing research. FMCG products are purchased frequently, consumed rapidly, and are deeply embedded in consumers' daily lives. Consequently, FMCG consumption contributes significantly to environmental pollution, packaging waste, and resource depletion (Gong et al., 2023). In response, FMCG firms increasingly adopt sustainability-oriented initiatives such as recyclable packaging, reduced carbon footprints, ethical sourcing, and community development programs, often communicating these efforts through marketing campaigns.

Despite the widespread adoption of such initiatives, empirical evidence suggests a persistent attitude–behaviour gap in sustainable consumption.

While consumers increasingly express positive attitudes toward environmentally and socially responsible products, these attitudes do not consistently translate into actual purchasing behaviour (Tanner & Kast, 2003; Qalati et al., 2024). This gap is more pronounced in emerging economies, where purchasing decisions are strongly influenced by price sensitivity, product availability, brand familiarity, and habitual buying patterns (Choudhury & Lakshmi, 2025).

Sri Lanka, as a developing economy, provides a meaningful empirical context for examining this phenomenon. The Sri Lankan FMCG market is characterized by intense competition, diverse consumer segments, and increasing exposure to sustainability-oriented branding. Leading FMCG companies such as Unilever, Hemas, Hayleys, Nestlé, and Coca-Cola have incorporated sustainability principles into their marketing strategies through green product innovations, CSR initiatives, and social marketing campaigns. However, despite these efforts, the extent to which sustainable marketing practices influence actual consumer behaviour remains unclear.

Existing literature largely focuses on consumers' intentions, attitudes, or perceptions toward sustainable products, with limited emphasis on behavioural outcomes, particularly in South Asian contexts (Khan & Fatma, 2023; Sandamali et al., 2025). Moreover, prior studies often treat sustainable marketing as having a direct effect on consumer behaviour, overlooking the role of brand-related mechanisms, such as brand equity, that may translate sustainability initiatives into consumer choice (Aaker, 1991). Similarly, the influence of corporate social responsibility (CSR) as a contextual factor that may strengthen or weaken the effectiveness of sustainable marketing has received limited empirical attention (Waghmare et al., 2025).

Against this background, this study seeks to provide a deeper and more nuanced understanding of how sustainable marketing influences consumer behaviour in Sri Lanka's FMCG sector. By examining green marketing and social marketing dimensions within a unified framework and by incorporating brand equity as a mediating mechanism and CSR as a moderating variable, the study responds to calls for mechanism-based and context-specific sustainable marketing research in emerging markets.

1.2 Research Problem

Although sustainable marketing has been widely examined in marketing literature, its effectiveness in influencing actual consumer behaviour remains inconclusive, particularly within the Fast-Moving Consumer Goods (FMCG) sector. Prior studies largely confirm that sustainable marketing positively affects consumer attitudes and purchase intentions; however, these favourable perceptions often fail to translate into real purchasing decisions, resulting in a persistent attitude-behaviour gap (Peattie, 2001; Tanner & Kast, 2003; Gong et al., 2023). This gap is especially evident in emerging economies, where consumer behaviour is strongly shaped by price sensitivity, habitual purchasing, and product availability rather than sustainability considerations (Qalati et al., 2024). Moreover, much of the existing empirical evidence is drawn from developed market contexts, limiting its applicability to countries such as Sri Lanka.

In addition, existing research frequently adopts a simplified, direct-effect perspective, overlooking the mechanisms and boundary conditions through which sustainable marketing influences consumer behaviour. Specifically, limited attention has been given to the role of brand equity as a mediating factor that translates sustainability initiatives into behavioural outcomes (Khan & Fatma, 2023). Similarly, the influence of corporate social responsibility (CSR) as a moderating variable remains underexplored, despite emerging evidence that excessive or symbolic CSR communication may generate consumer scepticism and weaken brand-related outcomes (Waghmare et al., 2025). Within the Sri Lankan FMCG sector, empirical studies examining these relationships remain scarce. Accordingly, this study addresses these gaps by examining the impact of sustainable marketing on consumer behaviour through the mediating role of brand equity and the moderating role of CSR in an emerging market context.

1.3 Research Objectives

The main objectives of this conceptual study are:

- Does sustainable marketing influence consumer behaviour in Sri Lanka's FMCG sector?

- What are the individual effects of green and social marketing on consumer behaviour?
- Does brand equity mediate the relationship between sustainable marketing and consumer behaviour?
- Does CSR moderate the sustainable marketing–brand equity relationship?

1.4 Significance of the Study

This study contributes to both theory and practice in several ways:

- It addresses a significant literature gap regarding sustainable marketing in the FMCG industry in Sri Lanka.
- It provides insights into consumer behaviour related to sustainable products, highlighting psychological, situational, and contextual factors that influence purchasing decisions.
- It informs marketing practitioners on how to integrate sustainability into their marketing strategies effectively, enhancing brand equity while promoting socially and environmentally responsible practices.
- It emphasizes the role of sustainable marketing in connecting the entire FMCG value chain, from suppliers to consumers, thereby supporting long-term business sustainability and societal well-being.

2. LITERATURE REVIEW

2.1 Sustainable Marketing: Concept and Evolution

Sustainable marketing has evolved as a response to growing environmental degradation, social inequality, and increasing stakeholder expectations for responsible business practices. Early discussions of sustainable marketing emphasized environmental protection through green marketing initiatives; however, contemporary perspectives adopt a broader, integrative approach

that balances environmental, social, and economic objectives (Peattie, 2001; Emery, 2012). Gordon et al. (2011) conceptualized sustainable marketing as a framework that not only minimizes negative externalities but also creates long-term value for consumers and society. Schouten and Martin (2012) further argue that sustainable marketing extends beyond product attributes and includes ethical communication, responsible consumption, and stakeholder engagement. This shift reflects a movement away from short-term transactional marketing toward long-term relationship building grounded in trust and legitimacy. Recent empirical studies reinforce this perspective, suggesting that sustainable marketing is increasingly used as a strategic tool to enhance brand positioning and competitive advantage (Gong et al., 2023). Despite its conceptual maturity, sustainable marketing research remains fragmented, with inconsistent findings regarding its impact on consumer behaviour, particularly in emerging markets. This inconsistency highlights the need for context-specific and mechanism-based investigations.

2.2 Sustainable Marketing and Consumer Behaviour

Consumer behaviour refers to the processes through which individuals select, purchase, use, and dispose of products and services to satisfy their needs (Schouten & Martin, 2012). Sustainable marketing is expected to influence consumer behaviour by shaping perceptions of responsibility, trust, and value. Numerous studies report positive relationships between sustainable marketing practices and consumer attitudes, awareness, and purchase intentions (Peattie, 2001; Gong et al., 2023).

However, empirical evidence also highlights a persistent attitude behaviour gap, where consumers express concern for sustainability but fail to reflect these concerns in actual purchasing decisions (Tanner & Kast, 2003). This gap is particularly evident in the FMCG sector, where low involvement, frequent purchases, and price sensitivity dominate consumer decision-making. Qalati et al. (2024) argue that in emerging economies, sustainability competes with functional attributes such as price, convenience, and brand familiarity, often reducing its behavioural impact. Therefore, understanding how sustainable marketing translates into actual consumer behaviour rather than intentions remains a critical unresolved issue in the literature.

2.3 Green Marketing and Consumer Behaviour

Green marketing represents a key dimension of sustainable marketing and focuses on reducing the environmental impact of products and processes through eco-friendly design, packaging, and communication (Peattie, 2001). Prior research indicates that green marketing positively influences environmentally conscious consumers and enhances purchase intention and willingness to pay a premium (Tanner & Kast, 2003). However, the effectiveness of green marketing is highly context dependent. Choudhury and Lakshmi (2025) note that while green claims attract attention, their influence weakens when consumers perceive higher prices or question the authenticity of environmental claims. In developing economies, green marketing alone may be insufficient to drive behavioural change unless supported by strong brand credibility and perceived value.

These mixed findings suggest that green marketing does not uniformly influence consumer behaviour and may require complementary mechanisms to be effective.

2.4 Brand Equity as a Mediating Mechanism

Brand equity refers to the value a brand adds to a product through consumer perceptions, associations, loyalty, and perceived quality (Aaker, 1991). Sustainable marketing initiatives can enhance brand equity by signalling ethical commitment, transparency, and long-term orientation. Empirical studies demonstrate that sustainability-driven marketing strengthens brand trust and advocacy, which in turn influence consumer behaviour (Khan & Fatma, 2023).

However, many prior studies treat brand equity as an outcome rather than a mechanism. Limited research empirically tests its mediating role between sustainable marketing and consumer behaviour, particularly in FMCG contexts. This omission represents a critical theoretical gap, as brand equity may be the key pathway through which sustainability initiatives influence purchasing decisions. By positioning brand equity as a mediator, the present study responds to calls for deeper, mechanism-based explanations in sustainable marketing research

3.METHODOLOGY

The thesis basically used the deductive approach, whereby the hypotheses have been developed based on the existing theories and the literature regarding the concepts of the Sustainable marketing and the related concepts under the study area. It has been identified the casual relationship among the variables by testing the derive hypothesis using the SPSS software and the outcome of the research seems to be more general in circumstances. Through the past research findings and scholars' articles regarding the concept of sustainable marketing, it has been identified a relationship regarding the concepts of Green and the impact on the consumer behaviour. Here all the variables under the study measured in quantitative aspects, using the five-point Likert's scale. So basically, research test each variable quantitatively, and derive the conclusion based on the numerical data analysis. Here the collected data from the sample was tested to find out the relationship among the variables under the study area. Accordingly, the final conclusion of the research based on the outcome of the hypothesis and the statistical analysis results, explanations and the gathered observation through the empirical studies. The research identified the relationship between the independent and the dependent variable under the following conceptual framework.

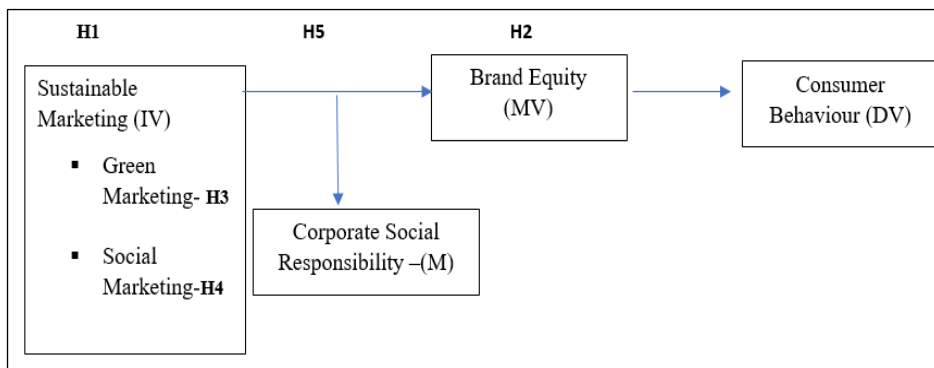


Figure 1: Conceptual Framework

For the study purpose, quantitative technique is used in which the set of structured questionnaires distributed among the Gampaha District consumers. Participants self-completed a survey questionnaire with most of items are measured by five-point Likert scale. In the study the unit of analysis was the individual consumers in the FMCG market in

Gampaha District. With respect to this study, the target population was 2,439,000 (Mid-year Population Estimates by District & Sex, 2022) consumers of FMCG market in Gampaha District and for the research purpose, considering the Krejcie & Morgan table (1970) sample of the study was made up of 385 consumer respondents which represent the consumers of FMCG market with a 95% confidence level. The research used the simple random sampling technique in the data collection and data analysed by using SPSS software package. This data collection method validity and the reliability test was performed.

The research identified the relationship between the independent and the dependent variable under the following conceptual framework.

4. DATA ANALYSIS & RESULTS

The study primarily employed quantitative methods and measured variables using a five-point Likert scale. All variables except demographic information are scale-type variables that can be analysed numerically. The Statistical Package for the Social Sciences (SPSS) Version 23 served as the main analytical tool for processing, summarizing, and interpreting the collected data. Through descriptive statistics, correlation, regression, mediation, and moderation analyses, the study sought to determine the nature and strength of relationships between Sustainable Marketing practices and Consumer Behaviour while also examining the mediating role of Brand Equity and the moderating influence of Corporate Social Responsibility (CSR).

The analyses were conducted to answer the core research questions formulated in the conceptual framework and to empirically test each hypothesis proposed in the study. The results derived from the statistical outputs contribute to understanding how Sustainable Marketing initiatives influence consumer purchasing decisions, particularly within the FMCG sector in the Gampaha District.

4.1 Descriptive statistics

Descriptive statistics were used to summarize, organize, and present the quantitative data collected from respondents. As the first step in data analysis, descriptive statistics offer a clear snapshot of the data set and help the researcher understand the distribution and central

tendencies of key variables. This study used measures such as minimum, maximum, mean, median, mode, and standard deviation to describe the characteristics of Sustainable Marketing dimensions (Green Marketing and Social Marketing), Brand Equity, CSR, and Consumer Behaviour.

By analysing these descriptive statistics, the researcher was able to identify patterns and trends within the responses, such as the overall perception of sustainable practices, the level of brand loyalty among consumers, and the extent to which CSR initiatives influence consumer attitudes. This foundational analysis directly supported the first research objective: to examine consumer perceptions of Sustainable Marketing practices in the Sri Lankan FMCG sector.

4.2 Regression Analysis

Regression analysis was used to explore the predictive relationships and test the direct effects among the independent and dependent variables. It is a statistical technique that models how a dependent variable change when one or more independent variables are altered (Kumari & Yadav, 2018). In this study, Linear Regression helped to determine the extent to which the independent variables—Green Marketing and Social Marketing—impact the dependent variable, Consumer Behaviour.

Using SPSS outputs such as the Model Summary, ANOVA table, and Coefficients table, the researcher evaluated the strength of the model using R^2 values and statistical significance ($p < 0.05$). The direct effect analysis addressed the second research objective: to determine whether Sustainable Marketing practices influence Consumer Behaviour.

- Dependent Variable: Consumer Behaviour
- Independent Variables: Sustainable Marketing (Green Marketing, Social Marketing)

Through regression, the study quantified how strongly and significantly each dimension of Sustainable Marketing predicts Consumer Behaviour among FMCG consumers in the Gampaha District.

4.3 Mediation Analysis

Mediation analysis was conducted to assess whether Brand Equity acts as a mediating variable between Sustainable Marketing and Consumer Behaviour. Mediation helps explain *how* or *why* an independent variable influences a dependent variable through a third variable known as the mediator. The study applied the widely accepted Baron and Kenny (1986) four-step approach to examine indirect effects, along with the Sobel test to confirm mediation significance. This analytical technique allowed the researcher to determine whether Sustainable Marketing not only directly influences Consumer Behaviour but also indirectly enhances consumer responses through increased Brand Equity. The mediation analysis supported the third research objective: to examine whether Brand Equity mediates the relationship between Sustainable Marketing and Consumer Behaviour.

4.4 Moderation Analysis

Moderation analysis investigates whether the strength or direction of a relationship between two variables changes depending on the level of a third variable. In this study, Corporate Social Responsibility (CSR) was examined as a moderator between Sustainable Marketing and Brand Equity. Using Hayes PROCESS Macro in SPSS, the researcher created an interaction term to test moderation effects. Significance of the interaction term ($p < 0.05$) and changes in R^2 values were used to interpret the moderating influence. If CSR significantly amplified or weakened the effect of Sustainable Marketing on Brand Equity, it confirmed the presence of moderation. This analysis addressed the fourth research objective: to evaluate whether CSR moderates the relationship between Sustainable Marketing and Brand Equity. Moreover, methodology employed to examine the impact of Sustainable Marketing on Consumer Behaviour, with Brand Equity as a mediator and CSR as a moderator among FMCG consumers in Sri Lanka. The chapter detailed the sampling procedures, data collection methods, variable operationalization, and analytical tools used to address the research objectives.

A total of 395 valid responses were collected from consumers familiar with brands from leading FMCG companies such as Hemas, Hayley's, Unilever, Nestlé, and Coca-Cola. The conceptual framework guided the formulation of hypotheses and the selection of appropriate statistical techniques. Descriptive statistics provided initial insights into the dataset, while regression, mediation, and moderation analyses offered empirical evidence of variable relationships. By linking each analysis technique to specific research objectives, the study ensured a coherent approach that accurately evaluated the effects of Sustainable Marketing on consumer responses.

4. DISCUSSION OF THE FINDINGS

The research finding highlighted that the dimensions of the sustainable marketing: Green Marketing and the Social Marketing has a significant impact on the consumer behaviour in the Sri Lankan FMCG sector. The proposed affection in the research model were tested using regression and mediation analysis.

Table 1: Correlation and regression summary

Variable	Sustainable marketing	Green Marketing	Social Marketing
Pearson correlation	0.720	0.343	0.404
Regression (r²)	0.751	0.615	0.817
Sig. value	0.000 Significant	0.000 Significant	0.000 Significant
Acceptance /Rejection	H 1 Accepted	H 2 Accepted	H 3 Accepted

According to the Table 1, Sustainable marketing activities of the FMCG impact on the consumer behaviour by 75%. Therefore, the research accepted the hypothesis H1 according to the regression analysis. As per the results, accordance with the variables which denoted the concept sustainable marketing, superior impact affected by the social marketing activities of FMCG by 81.7%, and green marketing impact is 61.5% on consumer behaviour. Thus, the research accepted the hypothesis H2 and H3 respectively.

Table 2: Mediation Analysis

Total Effect SM> CB		Direct Effect SM> CB		Indirect Effect				
Coefficient	p-value	Coefficient	p-value	coefficient	SD	T Value	P value	
0.114	0.000	0.35	0.000	H4 SM.>BE.>CB	0.294	0.046	6.38	0.000

Table 2 indicate the mediation analysis on whether the brand equity mediate the relationship between the sustainable marketing and consumer behaviour. Accordingly, the total effect and the direct effect of the model is significant $p=0.000$ ($p<0.05$). In the mediation, the indirect also recorded a significant value, $p=0.000$, $t=6.38$, $b=0.294$, it indicates that the variable brand equity mediate the impact of sustainable marketing on the consumer behaviour. A significant portion of the consumers expressed a preference for brands known their environmental sustainability practices and the sustainable marketing efforts can influence on brands choices.

Table 3: Moderator Summary

	Coefficien ts	SE	t	p
constant	.459	.531	.864	.388
S_M	.886	.170	5.205	.000
CSR	.837	.145	5.791	.000
Int_1	-.208	.042	-4.932	.000

Table 4.: Model Summary

Model Summary				
R	R ²	M S E	F	P
.36	.1	.1	20.44	.0
7	35	4	1	0
		5		0

According to the moderator results referring the Table 2 and Table 3, Sustainable Marketing recorded a significant positive impact on brand equity ($B=0.886$, $P<0.001$). This suggest that as Sustainable Marketing efforts increases, brand equity tends to increase as well. Further, corporate social responsibility also has a significant positive impact on brand equity ($B=0.837$, $P<0.001$). This indicate that CSR activities increase, brand equity is likely to increase. The interaction effect between sustainable marketing and corporate social responsibility on brand equity was found to be significant ($B=-0.208$, $P<0.000$). This means that the relationship between sustainable marketing and brand equity is moderated by corporate social responsibility.

In this research, the researcher used Descriptive Statistics, correlation & regression mediator, and moderator to find out the results according to the hypotheses. Based on the results which were found in chapter 4, the researcher indicates the relevant suggestions and recommendations for the research. Every research is carried out to find out the truth based on the presented data and data analysis and all findings are identified. Accordingly, the research was conducted continuously to measure the impact of Sustainable marketing on consumer behaviour in FMCG market special reference to Gampaha District consumers.

According to the regression results it indicates that the Sustainable marketing activities positively impact on the consumer behaviour and it is $R^2=0.751,75\%$ in relation to the Gampaha district FMCG consumers. Hence marketing places, a significant impact on the consumer behaviour, whereby the overall significant value of the model is also statistically significant P-value is less than 0.05 (05%), it is evidenced the overall goodness of the formula. When considering

the variables of the Sustainable marketing: Green Marketing and the Social Marketing, its reveal that those activities also positively impact on the consumer behaviour. Accordingly, Green marketing activities of the FMCG market create 61 % impact, where the P-value is less than 0.05 (05%), in relation to the Gampaha District consumers. In relation to social marketing activities,81% affect to change the consumer behaviour in the FMCG market. model is also statistically significant P-value is less than 0.05 (05%).

In the effect of the mediation analysis, it was concluded that the consumers in Gampaha District, are keen on the brand equity whereby it mediate the relationship between the Sustainable marketing and consumer behaviour. ($p < 0.01, .000$), whereby the mediation effect become significant. The Sustainable marketing activities enhance the brand awareness, brand loyalty, perceived quality, and brand association of the consumers in the FMCG market relation to Gampaha District.

In relation to the moderator results, suggest that Sustainable Marketing and CSR both individually contribute positively to Brand Equity. ($B = 0.837, P < 0.001$). However, the interaction effect indicates that the relationship between Sustainable Marketing and Brand Equity varies depending on the level of corporate Social Responsibility ($B = -0.208, P < 0.000$). Specifically, Sustainable Marketing has a stronger positive effect on Brand Equity when CSR is low, but its impact diminishes as CSR increases. At high levels of CSR, Sustainable Marketing may not significantly contribute to Brand Equity.

Accordingly, research can conclude that, in relation to the Gampaha District consumers Sustainable Marketing activities of the FMCG is one of the key factors in changing the consumer behaviour. Consumers behaviour through those activities, mediate through the brand equity, where the consumer preference to brand and its' association, perceived quality for different brands, brand perception will be significant factors. CSR activities also positively affect to create the Brand equity, but at high levels of CSR, Sustainable Marketing may not significantly contribute to brand equity.

5. Implication and the Conclusion of the study

In conclusion, the study delved into the intricate relationship between sustainable marketing practices, consumer behaviour, brand equity, and their interconnectedness within the fast-moving consumer goods (FMCG) industry in Sri Lanka, with a specific focus on the Gampaha District. The findings of this research shed light on several crucial aspects of the industry and provide valuable insights for both practitioners and policymakers. Firstly, the study revealed that sustainable marketing practices have a significant impact on consumer behaviour in the FMCG sector. Sri Lankan consumers are increasingly becoming conscious of environmental and social issues, and they are more likely to support brands that align with their values. Sustainable marketing strategies, such as eco-friendly packaging, ethical sourcing, and community engagement, can influence consumer choices and purchasing decisions. This underscores the importance for FMCG companies operating in Sri Lanka to incorporate sustainability into their marketing strategies.

The research confirmed the mediating role of brand equity in the relationship between sustainable marketing and consumer behaviour. Brand equity acts as a bridge that connects consumers with the values and reputation of a brand. When companies adopt sustainable marketing practices and effectively communicate their commitment to environmental and social responsibility, they can enhance their brand equity. Strong brand equity, in turn, fosters consumer loyalty, trust, and willingness to pay premium prices for sustainable products. Furthermore, the study found that the Gampaha District, as a representative region of Sri Lanka, reflects similar consumer behaviour patterns observed in the broader national context. Consumers in Gampaha, like those in other parts of the country, exhibit a growing preference for sustainable products and are influenced by brand equity when making purchasing decisions. This suggests that the insights derived from this study can be generalized to a larger extent across Sri Lanka.

6. REFERENCES

- Aaker, D. A. (1991). *Managing brand equity: Capitalizing on the value of a brand name*. Free Press.
- Alhomid, A. (2025). Building trust in sustainable journeys: The interplay between green marketing, green brand trust, and

tourism purchase intentions. *Sustainability*, 17(18), 8464.
<https://doi.org/10.3390/su17188464>

Choudhury, S. C., & Lakshmi, K. S. (2025). Cross-cultural and regional trends in green marketing: A bibliometric analysis. *Journal of Marketing and Social Research*, 2(8), 165–179.
<https://doi.org/10.61336/jmsr/25-08-17>

Emery, B. (2012). *Sustainable marketing*. Pearson Education.

Gong, X., Tang, X., & Li, J. (2023). How sustainable marketing influences customer engagement and sustainable purchase intention: The moderating role of corporate social responsibility. *Journal of Cleaner Production*, 389, 136116.
<https://doi.org/10.1016/j.jclepro.2023.136116>

Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (2nd ed.). Guilford Press.

Khan, I., & Fatma, M. (2023). Impact of CSR authenticity on brand advocacy: The mediating role of brand equity. *Sustainability*, 15(11), 8613. <https://doi.org/10.3390/su15118613>

Khan, Z., & Ali, F. (2025). Corporate social responsibility and consumer purchase intention: The mediating role of brand equity—A systematic review (2018–2025). *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.5602570>

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), 607–610.
<https://doi.org/10.1177/001316447003000308>

Peattie, K. (2001). Towards sustainability: The third age of green marketing. *The Marketing Review*, 2(2), 129–146.
<https://doi.org/10.1362/1469347012569869>

Qalati, S. A., Ostic, D., Fan, M., & Mirani, M. A. (2024). Consumer behaviour and sustainable marketing: The role of corporate

social responsibility and green trust. *Sustainability*, 16(7), 2829. <https://doi.org/10.3390/su16072829>

Sandamali, I., Weerakkody, M., & Sachitra, V. (2025). Consumer response to sustainable production messages on social media: Evidence from Sri Lanka's FMCG sector. *Asian Journal of Marketing Management*, 4(2), 1–18. <https://doi.org/10.31357/ajmm.v4i2.8029>

Shekhar, S. K., & Venugopal, P. (2025). Social marketing and consumer behavior: A bibliometric analysis. *Future Business Journal*, 11, 85. <https://doi.org/10.1186/s43093-025-00500-2>

Tanner, C., & Kast, S. W. (2003). Promoting sustainable consumption: Determinants of green purchases by Swiss consumers. *Psychology & Marketing*, 20(10), 883–902. <https://doi.org/10.1002/mar.10101>

INFLUENCE OF POINTS, REWARDS, AND LEADERBOARDS AS GAMIFICATION STRATEGIES ON ECO-TOURISM CHOICES IN SRI LANKA

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ABSTRACT

Digital marketing has grown rapidly in recent years, changing how travel experiences are advertised and enjoyed globally. Gamification has become a promising strategy to promote responsible tourism behavior due to the global rise in sustainable travel trends and innovations in digital marketing. Gamified strategies like leaderboards, points, and rewards are being used more frequently in the tourism industry to affect tourist engagement. This study investigates how gamification techniques affect Sri Lankan tourists' decisions about eco-tourism. It seeks to assess how these strategies impact tourists' awareness, preferences, and intention to travel sustainably. Additionally, the study aims to determine which gamification elements have most impact on environmentally conscious decision-making. 103 respondents, both domestic and foreign tourists were given a structured questionnaire as part of a quantitative study approach. A 5-point Likert scale was used in the questionnaire to scale responses. Participants were contacted via social media and eco-tourism communities using convenience and snowball sampling techniques. Using SPSS software, descriptive statistics and multivariate multiple regression analysis were used to analyze the data. The study's findings showed that all three gamification strategic elements such as points, rewards, and leaderboards have a positive impact on eco-tourism choices. The findings

demonstrate how gamified digital marketing can encourage environmentally friendly travel practices in Sri Lanka. This study helps fill a gap in the literature on the use of gamification in eco-tourism by giving marketers, eco-tourism operators, and policymakers useful information on how to use interactive digital strategies to promote eco-friendly tourism.

Key words: *Digital Marketing, Eco-Tourism, Eco-Tourism Choices, Gamification Technology*

1. INTRODUCTION

In recent years, eco-tourism has become very popular. It is defined as responsible travel to natural areas that protects the environment and improves the health of local communities (Kumar et al., 2023). This increase is mostly due to more people being aware of environmental issues and wanting to travel in a way that doesn't harm the environment. Modern travelers, especially Millennials and Generation Z, are more likely to make choices that lower carbon footprint, protect natural habitats, and help with sustainable development (Skinner et al., 2017).

The growth of eco-tourism shows how society is moving toward sustainability because people are more worried about climate change, loss of biodiversity, and the degradation of natural resources (Rosmadi et al., 2024). Sri Lanka is a top eco-tourism destination because of its unique biodiversity, many different ecosystems, and rich cultural history. The island nation has a lot of eco-tourism activities to offer, from green rainforests to beautiful beaches and lots of wildlife. However, the industry has a lot of problems, such as the fact that both international and domestic travelers don't know much about eco-friendly tourism options and sustainable practices.

Sangpikul (2010) points out similar problems in Thailand's eco-tourism industry and stresses the need for new marketing strategies to fill these gaps. Digital marketing has become a strong way to deal with these problems. It helps eco-tourism businesses reach more people who are interested in their services through online advertising, content marketing, search engine optimization (SEO), and social media. These strategies not only teach people about eco-

tourism, but they also get them involved in fun and meaningful ways (Massi & De Nisco, 2018).

Businesses can use digital platforms to make campaigns that appeal to eco-conscious travelers and encourage eco-friendly tourism practices. Simultaneously, gamification has surfaced as a revolutionary strategy to augment customer engagement across various sectors, including tourism. Gamification is when you use game design elements like points, badges, challenges, and leaderboards in non-gaming situations to make them more immersive and interactive (Hamari et al., 2014). When used in eco-tourism, gamification is a way to change how tourists act by making them more aware of the environment and encouraging them to act responsibly.

Mekler et al. (2017) stated that using gamification in eco-tourism marketing is a good idea. Skinner et al. (2017) contend that serious games and gamified content possess the capacity to educate and incentivize tourists to adopt sustainable practices, such as opting for eco-friendly accommodation or minimizing plastic consumption during their travels. In Sri Lanka, where eco-tourism has a lot of potential to help the economy and the environment, using gamification in digital marketing is a great way to change how tourists behave for the better. Gamified digital marketing strategies can reward travelers for doing things that are good for the environment, like going to local conservation projects, cutting down on waste, or choosing eco-friendly travel options. These kinds of strategies not only make tourists feel good about themselves, but they also fit with the main ideas behind eco-tourism, which helps the environment in the long run (Hamari & Koivisto, 2015). Aebli (2017) emphasizes the increasing fascination of tourists with gamified technology, showcasing its ability to improve travel experiences and promote engagement in sustainable practices.

Pasca et al. (2021) also stated in their systematic review that gamification in tourism and hospitality is still in its early stages, which means there is a lot of room for new ideas and research. This study seeks to fill this void by analyzing the influence of gamified digital marketing strategies on eco-tourism decisions in Sri Lanka. Additionally, the online marketing of eco-tourism, as examined by Sangpikul (2010) and Massi & De Nisco (2018), has illustrated the significance of engaging and educating tourists via digital platforms.

Gamification, which could make users more engaged and encourage them to act in a way that is good for the environment, is still not widely used in the eco-tourism industry. Gamification has been utilized across multiple sectors to enhance consumer engagement; however, its implementation in eco-tourism marketing remains nascent (Hamari et al., 2014). Mekler et al. (2017) propose that specific gamification components, including intrinsic rewards and performance feedback, can incentivize users; however, empirical evidence regarding the adaptation of these components to eco-tourism is scarce. Moreover, there is an absence of scholarly research explicitly examining the impact of gamified marketing content on the eco-tourism sector. Aebli (2017) observes that although gamified technology can improve travel experiences, its efficacy in advocating for eco-friendly tourism practices remains inadequately investigated. Pasca et al. (2020) also stress the need for systematic studies on gamification in tourism, especially when it comes to digital platforms.

The use of gamification in eco-tourism marketing in Sri Lanka is almost completely new. Sri Lanka is a top eco-tourism destination, but the industry has not yet fully used modern marketing methods to its advantage. Previous efforts to promote eco-tourism in Sri Lanka have mostly relied on traditional marketing methods, which don't always work with younger, tech-savvy people who are most likely to choose eco-friendly travel options. This study seeks to address this deficiency by examining the influence of gamified digital marketing strategies on eco-tourism decisions in Sri Lanka. This research aims to elucidate the integration of digital marketing and gamification for the effective promotion of sustainable tourism by tackling these challenges. The results will enhance the comprehension of the impact of contemporary marketing strategies on consumer behavior, thereby facilitating the advancement of eco-tourism in Sri Lanka and beyond by addressing the research question: "how do gamification strategies influence eco-tourism choices among tourists?"

2. LITERATURE REVIEW

2.1 Underpinning Theory: Push-Pull Theory of Tourism Motivation

Dann (1977) Push-Pull Theory elucidates tourist motivation through internal and external factors. Push factors are personal reasons for doing something, like wanting to relax or take care of the environment. Pull factors are things that draw people in from the outside, like the features of a destination or marketing strategies. This research indicates that push motivations, such as environmental awareness, preferences and travel intention can be boosted through engaging digital content. Furthermore, gamified digital marketing elements serve as pull factors such as points, rewards and leaderboards, encouraging tourists to adopt sustainable behaviors.

2.2 Digital Marketing in Tourism

Digital marketing has become a powerful tool for changing the tourism industry, especially eco-tourism, by helping destinations better communicate their unique features and values of sustainability. Buhalis & Sinarta (2019) say that digital marketing lets service providers and travelers work together to create value in real time.

2.3 Gamification in Tourism

Gamification is the use of game-like elements in settings that aren't games to get people more interested and motivated (Huotari & Hamari, 2017). In tourism, gamification changes the way people watch things by making them interactive. Xu et al. (2016) pointed out that using gamification techniques can make planning and going on a trip more fun, which can improve the overall experience for tourists.

2.4 Gamification Elements/Factors Leading to Emerge Eco-tourism Choices

Gamified marketing uses certain features to get people to interact and change their behavior. Points, rewards, and leaderboards are three main features that are often used in tourism apps and campaigns.

2.4.1 Points

Points are a basic part of gamification that encourages people to do things by showing them how far they've come. Based on Self-Determination Theory (SDT), points meet psychological needs like competence and autonomy, making people feel good about the choices they make (Sailer et al., 2017; Xi & Hamari, 2019).

2.4.2 Rewards

Rewards, whether intrinsic or extrinsic, make users happier and keep them interested in gamified systems. These mechanisms satisfy tourists' psychological needs by providing emotional satisfaction or concrete advantages (Xi & Hamari, 2019; Negruşa et al., 2015). Badges, certificates, and eco-discounts are all examples of digital rewards that can be very motivating, especially when they are set up in tiers that give you more benefits over time (Hamari, 2019).

2.4.3 Leaderboards

Leaderboards add a competitive and social element to gamification by ranking users based on how well they do things that are good for the environment. Leaderboards are based on Self-Determination Theory (SDT), which says that people need to feel connected to others. Leaderboards boost motivation by making people feel like they belong and are recognized (Deterding et al., 2011).

2.5 Consumer Behavior and Eco-Tourism Choices

Digital content has a big effect on how tourists choose where to go. Han & Kim (2018) stressed that green marketing content, like online ads for eco-friendly hotels, can affect where tourists choose to go. Tussyadiah & Fesenmaier (2009) said that user-generated content, like reviews, blogs, and shared travel experiences, has a big impact on how people think about sustainability. Hudson & Thal (2013) suggested that consistent exposure to sustainability messages via digital platforms enhances informed and environmentally conscious travel choices.

2.6 Empirical Review

2.6.1 Digital Marketing's Role in Sustainable Tourism

Numerous studies have validated the beneficial impact of digital marketing on eco-tourism. Gretzel & Zhong (2017) showed how platforms can help people learn about eco-friendly practices, and Ketter & Avraham (2021) showed how digital marketing during the COVID-19 pandemic encouraged people to travel in an eco-friendlier way. Zhang et al. (2025) expanded this comprehension by demonstrating that gamified digital platforms improve destination branding and promote environmentally conscious behavior by eliciting cognitive and emotional reactions in users.

2.6.2 Gamification's Effect on Tourist Consumption Behavior

Gamification has also been shown to change how tourists act in a way that can be measured. Xu et al. (2016) determined that gamified mobile applications enhance user engagement. Negruşa et al. (2015) discovered that the application of gamification techniques in eco-tourism promoted more sustainable practices. Sigala (2015) confirmed these results by demonstrating that gamification enhances both the educational and recreational dimensions of travel. Rosmadi et al. (2024) emphasized that reward-based mechanisms can greatly enhance tourists' environmental attitudes and sense of responsibility, resulting in increased participation in eco-tourism experiences. Zhang et al. (2025) stressed that systems based on achievement and social comparison tools like leaderboards directly increase the desire to travel to sustainable destinations by making digital engagement both competitive and rewarding. Ahmad et al. (2024) also found that adding point-based progress tracking and tiered reward systems to digital campaigns can effectively change behavior.

2.6.3 Studies in the Sri Lankan Context

Although international research supports the effectiveness of gamification and digital marketing in advancing sustainable tourism, a substantial gap in context-specific research within Sri Lanka. Teare et al. (2013) examined the role of digital tools in enhancing rural tourism, while reports such as "Forest-Based Ecotourism in Sri Lanka" emphasize the significance of digital engagement. Most of the current studies do not adequately explore the direct impact of specific gamification elements on eco-tourism choices. This research endeavors to address these gaps through an empirical analysis of how gamified digital marketing strategies influence eco-tourism behavior within the Sri Lankan context.

3. METHODOLOGY

3.1 Conceptual Framework

The subsequent conceptual framework delineates the impact of variables affecting Eco-Tourism Choices. After thoroughly examining prior research, the investigator categorized the independent variables into three sub-variables.

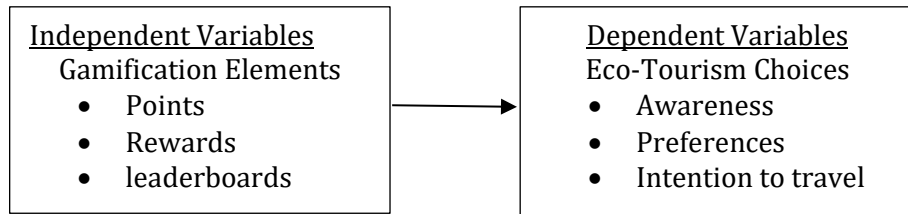


Figure 1: Conceptual Model

Source: Hypothesized Research Model

3.2 Hypotheses

3.2.1 Points and Eco-tourism Choices

Point systems encourage eco-friendly behaviors like staying in green-certified places or using low-impact transportation by giving users visible feedback and letting them see how far they've come (Huotari & Hamari, 2017; Sigala, 2015). Prior research indicates that point-based systems enhance user engagement, facilitate enduring behavioral modification, and yield favorable impacts on sustainable tourism decisions (Zhang et al., 2025). Based on the findings from past studies, the following hypotheses were formulated.

H1: Points have a significant impact on the likelihood of tourists choosing eco-tourism destinations.

H1a: Points have a significant impact on eco-tourism awareness.

H1b: Points have a significant impact on eco-tourism preferences.

H1c: Points have a significant impact on intention to engage in eco-tourism.

3.2.2 Rewards and Eco-Tourism Choices

Rewards appeal to extrinsic motivation by providing direct incentives for sustainable behaviors, including discounts, loyalty benefits, or recognition (Hamari & Koivisto, 2015). Studies show that even small rewards can change behavior in a measurable way, such as getting more people to participate in low-impact tourism and becoming more aware of the environment (Sigala, 2015; Ahmad et al., 2024). The preceding findings from previous research studies led to the formulation of the following hypotheses.

H2: Reward has a significant impact on the likelihood of tourists choosing eco-tourism destinations.

H2a: Rewards have a significant impact on eco-tourism awareness.

- H2b: Rewards have a significant impact on eco-tourism preferences.
H2c: Rewards have a significant impact on intention to engage in eco-tourism.

3.2.3 Leaderboards and Eco-Tourism Choices

Leaderboards enhance social motivation by fulfilling the human need for connection and acknowledgment through the public ranking of users based on their sustainable behaviors (Deterding et al., 2011; Seaborn & Fels, 2015). Leaderboards boost accountability and encourage pro-environmental behavior by letting people compare themselves to others (Hamari et al., 2014). Research substantiates that competitive dynamics and social visibility promote enduring engagement and affect tourists' eco-tourism intentions (Leung et al., 2015; Zhang et al., 2025). The subsequent hypotheses were formulated based on the research findings from prior studies.

H3: Leaderboard has a significant impact on the likelihood of tourists choosing eco-tourism destinations.

H3a: Leaderboards have a significant impact on eco-tourism awareness.

H3b: Leaderboards have a significant impact on eco-tourism preferences.

H3c: Leaderboards have a significant impact on intention to engage in eco-tourism.

3.3 Research Design

The study adhered to a positivist philosophy, prioritizing empirical observation. A deductive research methodology was utilized, informed by theoretical frameworks and existing literature. A quantitative approach was employed to methodically assess the influence of gamification on eco-tourism. Structured surveys were distributed via convenience and snowball sampling, aimed at local and international tourists. The study used convenience sampling because it allowed the researchers to reach participants who were easily accessible. Snowball sampling was used to help find tourists, who were harder to contact for data collection. This snowball method helped researchers find tourists who had already visited, using the tourists who were available during the in-person data collection. The strategy facilitated statistical analysis of each variable through Likert scales, enabling accurate, reproducible measurement consistent with the study's positivist orientation. The target population of this study

comprises domestic and international tourists who have participated in eco-tourism activities. This study has a sample size of 103. The primary data for this research were collected for the first time using a structured questionnaire with a 5-point Likert scale, which was distributed among both local and foreign tourists. The data that were gathered were examined with the help of the computer program Statistical Package for Social Sciences (SPSS 25.0). The data were analyzed using both descriptive and inferential analysis (Multiple and multivariate multiple regression analyses) techniques.

4. DATA ANALYSIS AND RESULTS

4.1 Demographic Profile Survey

Table 1: Demographic Profile

Variables	Category	Frequency	Percent
age group	18–24	35	34.0%
	25–34	45	43.7%
	35–44	18	17.5%
	45–54	4	3.9%
	55+	1	1.0%
Type of tourist	Foreign tourist	57	55.3%
	Sri Lankan living abroad	14	13.6%
	Local tourists	32	31.1%
Knowledge about tourism	Not familiar	7	6.8%
	Slightly familiar	5	4.9%
	Moderately familiar	14	13.6%
	Very familiar	46	44.7%
	Extremely familiar	31	30.1%
Engagement with digital marketing campaigns	Never	10	9.7%
	Rarely	6	5.8%
	Sometimes	16	15.5%
	Often	42	40.8%
	Always	29	28.2%
preferred destinations	Eco-friendly and historical destinations	90	87.4%
	Urban/city destinations	13	12.6%
visited eco-tourism destination	No	14	13.6%
	Yes	89	86.4%

Likelihood of gamification	Very negative	1	1.0%
	Negative	2	1.9%
	Neutral	8	7.8%
	Positive	48	46.6%
	Very positive	44	42.7%
likelihood of using Gamified platform	Not likely	2	1.9%
	Slightly likely	1	1.0%
	Neutral	18	17.5%
	Very likely	28	27.2%
	Extremely likely	54	52.4%

Research Data (2025)

The age distribution shows that most of the people who answered are young adults. The 25–34 age group makes up the biggest group (43.7%), followed by the 18–24 age group (34%). The percentages for the age groups 35–44 (17.5%), 45–54 (3.9%), and 55+ (1%) are very low. Most of the people who were taken into the survey are young, which means they are probably more interested in travel and digital marketing. Most of the people who answered (55.3%) are tourists from other countries. 31.1% of the people who travel are from Sri Lanka, and 13.6% are Sri Lankans who live abroad. This shows that the sample is diverse, with most people coming from other countries.

44.7% are "very familiar" and 30.1% are "extremely familiar." Only a small number of people say they are not very familiar with eco-tourism (6.8% say they are "not familiar" and 4.9% say they are "slightly familiar"). The sample shows that people are very aware, which makes them good candidates for judging eco-tourism marketing efforts. 40.8% of travelers "often" and 28.2% "always" use digital marketing. Only a small number of people take part in this activity on a regular basis or not at all. In general, the results show that digital marketing is having a bigger effect on travel decisions. Only 12.6% of those who answered said they liked cities better, while 87.4% said they liked historical and eco-friendly places better. This shows that people really like travel that is based on their heritage and is good for the environment. In general, the tendency fits with the growing interest in ecotourism.

86.4% of those who answered said they had been to an ecotourism destination in Sri Lanka, while 13.6% said they had not. This shows how common eco-tourism is in the sample. In general, it shows that eco-friendly travel spots are popular and easy to get to. 46.6% of

people who answered the question had a positive opinion, and 42.7% had a very positive opinion. This shows that people are very positive about gamification. Only a small number of people say they have negative or very negative opinions. In general, people who answered the survey strongly support gamification to market. 52.4% of people who answered are very likely to use a travel platform that rewards people for being eco-friendly, and 27.2% are very likely to do so. Only a small number of people show little interest. The results suggest that incentives such as redeemable points could effectively attract travelers to eco-tourism destinations.

4.2 Reliability Test

Table 2: Test of reliability

Variables	No Item	Cronbach Alpha
Points	03	0.850
Reward	03	0.902
Leaderboard	03	0.946
Awareness	03	0.913
Preference	03	0.914
Intention To Travel	03	0.939

Source: Research data (2025)

As shown in Table 2, Cronbach's Alpha coefficients were calculated for each variable in this study to make sure that the measurement scales were consistent and reliable. The findings show that all constructs have very good internal consistency because the Cronbach's Alpha values were higher than the accepted threshold of 0.70, which means they are very reliable.

4.3 Multiple Regression Analysis

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.891 ^a	.793	.787	.46752

a. Predictors: (Constant), Leaderboard, Reward, Points

Source: Research data (2025)

The model has a R value of 0.891, which means that there is a very strong positive link between the gamification elements and the decisions that tourists make. The R Square value of 0.793 shows that these gamification factors can explain 79.3% of the differences in how

likely tourists are to choose eco-tourism destinations. The Adjusted R Square value of 0.787 also shows that about 78.7% of the difference in tourist choices is still explained, even after considering the number of predictors. These findings underscore that gamification strategies, especially through components such as leaderboards, rewards, and points, significantly influence tourists' decision-making, rendering it an effective instrument for promoting eco-tourism, particularly in locations like Sri Lanka.

Table 4: Coefficient table

	Model	Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.634	.590		2.769	.007
	Points	.630	.251	.228	2.510	.014
	Reward	1.543	.251	.521	6.160	.000
	Leaderboard	.518	.194	.204	2.671	.009

a. Dependent Variable: Eco tourism choices

Source: Research data (2025)

Table 4 shows the coefficients for the model that predicts how likely tourists are to choose eco-tourism destinations based on gamification elements: Points, Reward, and Leaderboard. The constant term is 1.634, which is the baseline chance of choosing eco-tourism destinations when all the other factors are zero. The unstandardized coefficient for Points is 0.630, which means that for every unit increase in Points, the chance of choosing eco-tourism destinations goes up by 0.630. The Beta value of 0.228 indicates a moderate positive effect of Points on the selection of eco-tourism. The t-value of 2.510 and the p-value of 0.014 show that this relationship is statistically significant at the 5% level.

The unstandardized coefficient for Reward is 1.543, which means that for every unit increase in Reward, the chance of choosing eco-tourism destinations goes up by 1.543. The Beta value of 0.521 shows that Reward has the biggest effect on eco-tourism choices. T-value of 6.160 and the p-value of 0.000 show that Reward has a very strong effect on what tourists choose to do. The unstandardized coefficient for Leaderboard is 0.518. This means that for every unit increase in Leaderboard, the chance of choosing eco-tourism goes up by 0.518. The Beta value of 0.204 shows that Leaderboard has a positive but not

very strong effect on eco-tourism choices. The t-value of 2.671 and the p-value of 0.009 show that Leaderboard also has a positive effect that is statistically significant.

The p-values for points (0.014), reward (0.000), and Leaderboard (0.009) are all less than 0.05. Consequently, all three hypotheses are accepted. Therefore, gamification strategies affect how likely people are to choose eco-tourism destinations.

4.4 Multivariate Multiple Regression Analysis

Table 5: Parameter Estimates

Dependent Variables	Parameter	B	Standard Error	t	p
Awareness	Intercept	0.585	0.250	2.344	0.021
	Points	0.232	0.106	2.184	0.031
	Rewards	0.430	0.106	4.057	0.000
	Leader_board	0.228	0.082	2.777	0.007
Preference	Intercept	0.459	0.213	2.156	0.034
	Points	0.136	0.091	1.501	0.137
	Rewards	0.706	0.090	7.806	0.000
	Leader_board	0.068	0.070	0.976	0.331
Intention_to_travel	Intercept	0.590	0.253	2.330	0.022
	Points	0.262	0.108	2.436	0.017
	Rewards	0.408	0.107	3.793	0.000
	Leader_board	0.222	0.083	2.668	0.009

Source: Research data (2025)

4.4.1 Awareness

The analysis of Awareness shows that all three gamification elements have a statistically significant positive effect on how aware tourists are of eco-tourism destinations. The Intercept for Awareness is 0.585, which is the level of Awareness when Points, Rewards, and Leaderboard are all zero. The p-value of 0.021 shows that this baseline is statistically important.

Rewards have the biggest effect on the predictors, with an unstandardized coefficient of 0.430. This means that for every one-unit increase in Rewards, Awareness goes up by 0.430 units, as long as Points and Leaderboard stay the same. The p-value for Rewards is 0.000, which is very important. This shows that Rewards have a big effect on Awareness. Points also have a positive effect on Awareness, with a coefficient of 0.232. This means that for every unit increase in

Points, Awareness goes up by 0.232 units. The p-value of 0.031 shows that this effect is statistically important. Leaderboard also has a good effect on Awareness, with a coefficient of 0.228. As Leaderboard goes up by one unit, Awareness goes up by 0.228 units. This is statistically significant with a p-value of 0.007. This means that Leaderboard has the least effect of the three predictors, but it still has a big impact on making people more aware of eco-tourism.

When it comes to testing hypotheses, all three predictors (Points, Rewards, and Leaderboard) have a big effect on how much people know about eco-tourism. This shows that gamification strategies that use these elements work to get tourists to learn more about eco-tourism destinations.

4.4.2 Preference

When looking at Preference, Rewards have the biggest effect, with a coefficient of 0.706. This means that if Rewards go up by one unit, Preference for eco-tourism destinations goes up by 0.706 units. A p-value of 0.000 means that this relationship is very important. Rewards seem to be a big reason why tourists choose eco-tourism, which means that incentives based on rewards could be a great way to encourage people to make more environmentally friendly travel choices.

Points and Leaderboard, on the other hand, have much less of an effect on Preference. The coefficient for Points is 0.136, which means that when Points go up by one unit, Preference goes up by 0.136 units. The p-value of 0.137, on the other hand, is higher than the usual significance level of 0.05, which means that the effect of Points on Preference is not statistically significant. The coefficient for Leaderboard is 0.068, and the p-value is 0.331, which means that Leaderboard does not have a statistically significant effect on Preference.

Based on these findings, Rewards are the only statistically significant predictor of Preference in this model. This finding indicates that Points and Leaderboard may exert some influence; however, they are less effective in shaping tourists' preferences for eco-tourism compared to Rewards.

4.4.3 Intention to Travel

The analysis of Intention to Travel indicates that Points, Rewards, and Leaderboard exert statistically significant positive effects. The

Intercept for Intention to Travel is 0.590, which means that when all the predictors are zero, this is the lowest level of Intention to Travel. There is a statistically significant difference between these values, with a p-value of 0.022.

The coefficient for Points is 0.262, which means that if Rewards and Leaderboard stay the same, an increase of one unit in Points will cause an increase of 0.262 units in Intention to Travel. The p-value of 0.017 shows that Points have a big effect on Intention to Travel. This means that adding more Points to a gamification system can make people more likely to want to travel to eco-tourism destinations.

Rewards have the most impact on Intention to Travel, with a coefficient of 0.408. This means that for every unit increase in Rewards, Intention to Travel goes up by 0.408 units. The p-value of 0.000 shows that rewards have a very strong positive effect on the intention to travel. This means that rewards-based incentives are a very effective way to get people to travel eco-tourism.

Leaderboard has a coefficient of 0.222, and a p-value of 0.009 shows that it also has a significant positive effect on Intention to Travel, but not as strong as Points and Rewards. This means that Leaderboard elements in gamification can affect tourists' plans to travel, but not as much.

All three predictors had a significant effect on Intention to Travel, which supports the idea that gamification elements, especially Rewards, are important in influencing tourists' choices of eco-tourism destinations. Rewards consistently rank as the most significant predictor for all three dependent variables (Awareness, Preference, and Intention to Travel), indicating that rewards-based gamification strategies are highly effective in promoting eco-tourism. Points and Leaderboard have some good effects too, but they aren't as strong, especially when it comes to Preference. The findings show that adding Rewards to eco-tourism marketing plans can greatly increase tourists' knowledge, interest, and plans to visit eco-friendly places. This shows how gamification technology could change people's choices about eco-tourism and encourage more environmentally friendly travel.

Table 6: Summary of Hypotheses Testing

Hypothesis	Dependent Variables	Result	p-value
H1a: Points positively influence Awareness	Awareness	Accepted	0.031
H2a: Rewards positively influence Awareness	Awareness	Accepted	0.000
H3a: Leaderboard positively influences Awareness	Awareness	Accepted	0.007
H1b: Points positively influence Preference	Preference	Rejected	0.137
H2b: Rewards positively influence Preference	Preference	Accepted	0.000
H3b: Leaderboard positively influences Preference	Preference	Rejected	0.331
H1c: Points positively influence Intention to Travel	Intention to Travel	Accepted	0.017
H2c: Rewards positively influence Intention to Travel	Intention to Travel	Accepted	0.000
H3c: Leaderboard positively influences Intention to Travel	Intention to Travel	Accepted	0.009

Source: Developed by Researcher (2025)

5. DISCUSSION OF THE FINDINGS

The results showed that Points ($p = 0.031$), Rewards ($p = 0.000$), and Leaderboards ($p = 0.007$) had statistically significant effects on awareness. This outcome corresponds with prior research conducted by Gretzel and Zhong (2017), which highlighted the significant role of digital tools, including gamification and social media, in promoting awareness of eco-tourism practices. Xu et al. (2016) likewise endorse the application of gamification to involve tourists in mobile learning and behavioral modification.

Rewards ($p = 0.000$) had a statistically significant effect on customer preference, while points and leaderboards had no significant effect on customer preference. This supports the notion that tourists are more influenced by tangible benefits, as emphasized by Hamari and Koivisto (2015), who discovered that reward mechanisms are especially successful in maintaining customer engagement and influencing preferences in tourism contexts.

Points ($p = 0.017$), Rewards ($p = 0.000$), and Leaderboards ($p = 0.009$) had significant effects on tourists' intention to travel. These results support the findings of Negruşa et al. (2015), who illustrated that gamification influences pro-environmental travel behaviors. Xi and Hamari (2019) found the impact of rewards on behavioral intentions, demonstrating that gamification can fulfill intrinsic motivations and enhance the probability of pro-environmental behaviors.

In the regression model, adjusted R^2 ($R^2=0.787$) and the correlation coefficients ($r=0.891$) further signify the substantial predictive capacity of gamification elements on eco-tourism decisions. This is in line with the work of Hamari et al. (2014), Huotari and Hamari (2017), Buhalis and Sinarta (2019) also found that using digital campaigns makes it easier to engage and co-create in real time, which makes gamified strategies in tourism more effective.

Rewards consistently proved to be the most influential gamification element across all dependent variables taken in this study, underscoring their pivotal role in shaping eco-tourism behavior. Points and leaderboards also made a big difference, especially when it came to raising awareness and getting people to want to travel. When these parts work well together, they can make a lively and interesting space that appeals to travelers who care about the environment. All three gamification strategies work well together for tourism marketers because they give people different ways to encourage sustainable travel behavior.

6. CONCLUSION & CONTRIBUTIONS

6.1 Conclusion

This study finds that gamified digital marketing strategies have statistically significant impact on tourists' eco-tourism decisions in Sri Lanka. Using multiple and multivariate regression, it was shown that gamification features like points, rewards, and leaderboards have a positive effect on tourists' awareness, preferences, and desire to travel. In Sri Lanka, where eco-tourism is very important for protecting the environment and helping local communities, gamified digital marketing is a scalable and interactive way to change how tourists behave. Based on these findings, tourism marketers should focus on reward-based gamification, along with points and competitive leaderboard features, to get people more involved and encourage eco-friendly travel habits. This strategy can not only bring

in tourists who care about the environment, but it can also help make sustainability a part of the tourism industry.

The results of this study are very important for eco-tourism businesses, digital marketers, and policymakers in Sri Lanka. Implications from this study indicate a strategic opportunity for eco-tourism enterprises to transition towards experience-oriented marketing strategies that are congruent with sustainable development objectives (Xi & Hamari, 2019). Additionally, this research substantiates that gamified marketing improves tourists' engagement with sustainability practices, fostering enduring environmentally responsible behavior (Gretzel & Zhong, 2017). The results also help tourism marketers figure out which gamification features are most likely to get people to participate. For example, Xu et al. (2016) found that badges, reward tiers, and social competition had a big effect on tourists. This means that policymakers may get a lot of bang for their buck by investing in gamified awareness campaigns to promote sustainable tourism practices, especially when these campaigns are part of national eco-tourism initiatives (Ketter & Avraham, 2021).

Based on the research, the Sri Lanka Tourism Development Authority (SLTDA) should think about making a single mobile app or platform that rewards tourists for eco-friendly travel habits, like staying at eco-certified lodges, taking public or green transportation, and helping with conservation efforts. Other global case studies (Boes et al., 2016) have shown that real-time rewards like badges and leaderboards can make people more interested. The government and digital marketing companies should also teach and reward small and medium-sized enterprises (SMEs) in eco-tourism to use gamified marketing tools.

This study shows that gamification has a measurable effect on awareness, preferences, and the desire to travel. Because of this, it is important for stakeholders to include analytics frameworks in gamified platforms. Metrics such as engagement duration, task completion rate, and reward redemption yield significant data for strategy refinement (Hamari et al., 2014; Huotari & Hamari, 2017).

Furthermore, the behavioral consequences of prolonged interaction with gamified applications have yet to be investigated within the Sri Lankan context, which is a limitation of this study. Future research might utilize longitudinal tracking to investigate the influence of

prolonged exposure to gamified content on actual travel behavior. Investigating the functionality of gamification among various age demographics, nationalities, and levels of technological proficiency would yield a more comprehensive understanding of its inclusivity and efficacy.

REFERENCES

- Aebli, A. (2019). Tourists' motives for gamified technology use. *Annals of Tourism Research*, 78, 102753.
- Ahmad, F., Kirmani, M. D., & Haque, A. (2024). Gamification Strategies for Enhancing Sustainability Marketing: Engaging Consumers in Eco-Friendly Behaviors. *Marketing and Gamification*, 192-221.
- Boes, K., Buhalis, D., & Inversini, A. (2016). Smart tourism destinations: ecosystems for tourism destination competitiveness. *International Journal of Tourism Cities*, 2(2), 108-124.
- Buhalis, D., & Sinarta, Y. (2019). Real-time co-creation and nowness service: lessons from tourism and hospitality. *Journal of Travel & Tourism Marketing*, 36(5), 563-582.
- Dann, G. M. (1977). Anomie, ego-enhancement and tourism. *Annals of tourism research*, 4(4), 184-194.
- Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011, September). From game design elements to gamefulness: defining "gamification". In *Proceedings of the 15th international academic MindTrek conference: Envisioning future media environments* (pp. 9-15).
- Gretzel, U., Signala, M., & Gretzel, U. (2017). *Advances in social media for travel, tourism and hospitality*.
- Hamari, J., & Koivisto, J. (2015). Why do people use gamification services?. *International journal of information management*, 35(4), 419-431.
- Hamari, J., Koivisto, J., & Sarsa, H. (2014, January). *Does gamification work?--a literature review of empirical studies on gamification*.

In 2014 47th Hawaii international conference on system sciences (pp. 3025-3034). Ieee.

Han, H., & Kim, Y. (2010). *An investigation of green hotel customers' decision formation: Developing an extended model of the theory of planned behavior. International journal of hospitality management, 29(4), 659-668.*

Hudson, S., & Thal, K. (2013). *The impact of social media on the consumer decision process: Implications for tourism marketing. Journal of Travel & Tourism Marketing, 30(1-2), 156-160.*

Huotari, K., & Hamari, J. (2012, October). *Defining gamification: a service marketing perspective. In Proceeding of the 16th international academic MindTrek conference (pp. 17-22).*

Huotari, K., & Hamari, J. (2017). *A definition for gamification: anchoring gamification in the service marketing literature. Electronic markets, 27(1), 21-31.*

Ketter, E., & Avraham, E. (2021). *# StayHome today so we can# TravelTomorrow: tourism destinations' digital marketing strategies during the Covid-19 pandemic. Journal of travel & tourism marketing, 38(8), 819-832.*

Kumar, S., Hasija, N., Kumar, V., & Sageena, G. (2023). *Ecotourism: a holistic assessment of environmental and socioeconomic effects towards sustainable development. Current World Environment, 18(2), 589.*

Leung, X. Y., Bai, B., & Stahura, K. A. (2015). *The marketing effectiveness of social media in the hotel industry: A comparison of Facebook and Twitter. Journal of hospitality & tourism research, 39(2), 147-169.*

Massi, M., & De Nisco, A. (2018). *the internet-Based Marketing of ecotourism: are ecotourists really Getting What they Want?. In Tourism planning and destination marketing (pp. 161-182). Emerald Publishing Limited.*

- Mekler, E. D., Brühlmann, F., Tuch, A. N., & Opwis, K. (2017). *Towards understanding the effects of individual gamification elements on intrinsic motivation and performance. Computers in human behavior, 71, 525-534.*
- Negruşa, A. L., Toader, V., Sofică, A., Tutunea, M. F., & Rus, R. V. (2015). *Exploring gamification techniques and applications for sustainable tourism. Sustainability, 7(8), 11160-11189.*
- Pasca, M. G., Renzi, M. F., Di Pietro, L., & Guglielmetti Mugion, R. (2021). *Gamification in tourism and hospitality research in the era of digital platforms: a systematic literature review. Journal of Service Theory and Practice, 31(5), 691-737.*
- Rosmadi, A., Zhou, W., & Xu, Y. (2024). *Meaningful Gamification in Ecotourism: A Study on Fostering Awareness for Positive Ecotourism Behavior. Sustainability (2071-1050), 16(19).*
- Sailer, M., Hense, J. U., Mayr, S. K., & Mandl, H. (2017). *How gamification motivates: An experimental study of the effects of specific game design elements on psychological need satisfaction. Computers in human behavior, 69, 371-380.*
- Sangpikul, A. (2010). *Marketing ecotourism through the internet: A case of ecotourism business in Thailand. International Journal of Hospitality & Tourism Administration, 11(2), 107-137.*
- Sigala, M. (2015). *The application and impact of gamification funware on trip planning and experiences: the case of TripAdvisor's funware. Electronic markets, 25(3), 189-209.*
- Skinner, H., Sarpong, D., & White, G. R. (2018). *Meeting the needs of the Millennials and Generation Z: gamification in tourism through geocaching. Journal of tourism futures, 4(1), 93-104.*
- Teare, R., Bandara, C., & Jayawardena, C. (2013). *Engaging the rural communities of Sri Lanka in sustainable tourism. Worldwide Hospitality and Tourism Themes, 5(5), 464-476.*

- Tussyadiah, I. P., & Fesenmaier, D. R. (2009). Mediating tourist experiences: Access to places via shared videos. Annals of tourism research, 36(1), 24-40.*
- Xi, N., & Hamari, J. (2019). Does gamification satisfy needs? A study on the relationship between gamification features and intrinsic need satisfaction. International Journal of Information Management, 46, 210-221.*
- Xu, F., Tian, F., Buhalis, D., Weber, J., & Zhang, H. (2021). Tourists as mobile gamers: Gamification for tourism marketing. In Future of Tourism Marketing (pp. 96-114). Routledge.*
- Zhang, Y., Shi, S., Liu, N., & Leung, W. K. (2025). From virtual to reality: how online gamification applications promote travel intention. Journal of Travel & Tourism Marketing, 42(6), 832-849.*

**PLAGIARISM AND THE ROLE OF ARTIFICIAL INTELLIGENCE
AMONG SOUTH ASIA UNIVERSITY STUDENTS: A SCOPING
REVIEW**

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ABSTRACT

This scoping review aims to apply the Arksey O'Malley framework to identify the ethical challenges in self-directed learning: plagiarism and the role of Artificial Intelligence in South Asia. The self-directed learning (SDL) movement has gained increasing prominence in South Asia's higher education landscape as a result of digital transformation and the growing integration of Artificial Intelligence (AI) tools within different academic settings. In this paper, we provide a conceptual framework for ethical challenges in self-directed learning, in particular, the role of artificial intelligence in self-directed learning in South Asia, as well as plagiarism challenges. This study suggests that the Autonomy,

Motivation, and the Psychological Experience of SDL affects the internal processes through which learners take ownership of their learning specially in South Asia. Traditionally, South Asian university systems emphasize teacher-led instruction, rote learning, and hierarchical relationships between teachers and students. This results in learners having fewer opportunities to practice independent decision-making. A student's perception of responsibility, control, and confidence in the learning process can be significantly shaped by the introduction of autonomy. The Rise of AI-Supported Learning and Academic Dishonesty influences how learners develop critical thinking in educational settings. A focus should be placed on Self-Regulated Learning (SRL) skills, unequal access, digital literacy, and the cultural context of South Asia, as these factors have a direct impact on how learners engage with modern, technology-supported education in that region.

Keywords: Ethical Challenges; Self-Directed Learning; Plagiarism; Artificial Intelligence; South Asia

1. INTRODUCTION

Artificial intelligence (AI) has been around for quite some time (Holmes & Tuomi, 2022; Rashid & Kausik, 2024). Rather than being viewed as a threat to education, it can potentially lead educators to a period of self-directed and pedagogical advancement (Rudolph et al., 2024). ChatGPT has gained importance since its release in November 2022 and has become one of the most widely used and downloaded applications in history (Lou, 2023). Students aren't aware of AI-specific regulations because universities have strict plagiarism laws (Du & Lv, 2024). This article discusses how South Asian students are adjusting to AI in higher education. Although universities have strict plagiarism regulations, most students don't know about AI-specific rules (Du & Lv, 2024). There are just so many students who don't know how to cut the middle ground between AI and plagiarism. I'm so afraid to be truthful about it: "If I admit to using AI, will my teachers think that I'm cheating?" Through student voice, reflection, and genuine classroom scenarios, it highlights the thin line between using

technology and meeting ethical standards. In place of statistics, policies, or technicalities-like how many students use AI or what university policies state-this article focuses on real experiences, emotions, and decisions by students and teachers (Mitra & Chitra, 2024) . The article focuses on how students feel using AI in class, the dilemmas they face, the decisions they make, and how teachers help them.

The article also explores how South Asian students are navigating this new ethical landscape, focusing on their lived experiences rather than statistics, institutional policies, or rigid frameworks (Rudolph et al., 2024) Through authentic voices and reflective classroom narratives, students attempt to balance self-directed learning with ethical integrity while grappling with uncertainty, guilt, and curiosity. Teachers also face challenges in encouraging innovation and independence while maintaining fairness and authenticity. This research is based on a comprehensive synthesis of digital academic publications (Yongjun et al., 2021). The primary objective of this work is to provide a comprehensive examination and synthesis of the existing corpus of scholarly research on artificial intelligence (AI) in the context of learning in tertiary education. This study is based on the systematic literature review of the online published papers. The study analysed the accessible published literature about artificial intelligence (AI) technologies and tools in self-directed learning among South Asian students.

The focus is on using ChatGPT to assist students with writing assignments, reading activities, and self-directed English language acquisition. A comprehensive review is conducted using the recommended reporting items for review and meta-analysis (PRISMA) criteria (Liberati et al., 2014). We sorted the papers using the following four steps: (1) identification, (2) screening, (3) eligibility, and (4) inclusion. The first section of this paper focuses on providing an overview of the research, second section focuses on synthesising the literature and third section is on developing the research prepositions that leads towards the conceptual framework and last section discuss about the implications, limitations and conclusion. Hence, the research question that this study is trying to solve is *'What are the ethical challenges in Self-Directed Learning with special reference to Plagiarism and the Role of Artificial Intelligence in South Asia?'*

2. SCOPING REVIEW APPROACH

Self-directed Learning (SDL) is widely gaining recognition especially across Asia when defining wholesome contemporary education, and as a result of the wave of rapid digital transformation, increased access to technology, and evolving pedagogical expectations, it has gotten the ability to re-shape the methods of how students learn, collaborate, and demonstrate academic integrity (Mthethwa-Kunene et al., 2021; Yew & Goh, 2016). Based on the similar studies in previous literature there is a collective suggestion on SDL; that it is promoting autonomy while supporting individualized learning and resonating with the 21st century skill development (Dr. Lohans Kumar Kalyani, 2024). However despite of the popularity SDL has gained it raises concerns about ethical vulnerabilities, especially the ones related to artificial intelligence (AI) as an everyday issue in the learners' academic routines.

Reviewing multiple sources of literature, the study finds recurring insights about SDL and its impact on ethical learning practices. All studies emphasize how SDL improves learning autonomy and enhances creativity and competence (Cerezo et al., 2016). Studies focussing on digital learning environments and blended learning, shed light upon the fact that when there is more responsibility on the learner in terms of pacing and when they get the full power of decision making, they have higher motivation and more meaningful and deeper engagement in the learning process (Broadbent & Poon, 2015; Cerezo et al., 2016; Pregoner & Baguio, 2024). As per the findings of Schweder & Raufelder, (2024), intrinsic motivation could be improved via digital SDL and this is mostly because it fulfils the basic psychological needs identified in the self-determination theory.

However, as a result of the gradual shift from physical to online or hybrid modalities, it brings up newer and harder complications in the ethical considerations which includes concerns such as plagiarism, ghost-writing, and misuse of digital tools. These are growing on a regular basis and has become one of the most pressing concerns in the functions of distance learning and virtual learning which resulted from pandemic outbreak (Mohebi Amin et al., 2024). Even though academic dishonesty is a major ethical breach, post-COVID 19 studies explain that, inconsistent expectations from teachers, unfamiliar systems and hidden curriculum incompatibilities lead the students

towards pushing their ethics to unacceptable boundaries (Mohebi Amin et al., 2024; Pregoner & Baguio, 2024).

Making the scenario more complex, generative AIs such as ChatGPT, are much preferred by the students as the AI-supported learning platforms facilitates personalized feedback, linguistic support, and rapid content clarification (Divito et al., 2024; Du & Alm, 2024; Lee & Zhai, 2024). Though the enthusiasm is intriguing, it is intertwined with ethical dilemmas, such as lacking clarity on appropriate use, maintaining academic honesty and the understanding about the actual boundary between assistance and plagiarism (Lee & Zhai, 2024). Further adding to this concern, findings of Du & Alm, (2024), elaborates that students tend to develop psychological tension when using AI which is a direct outcome of the uncertainty about institutional rules and fear of violating plagiarism standards.

2.1 Importance of a scoping review study on plagiarism and the role of AI among South Asia University Students

According to the previous pedagogical literature, there is substantial evidence to suggest that artificial intelligence has both empowering and risky implications. Many studies investigating teachers' lesson designs and AI integration point out the dangers of overdependence on artificial intelligence, possible hallucinations, and diminished cognitive struggle (Lee & Zhai, 2024; Woods & Copur-Gencturk, 2024). It elaborates on the inequalities in digital access, readiness, and technological literacy across Asia, including Indonesia, Iran, and the Philippines, which further influence ethical decision-making among students (Pregoner & Baguio, 2024; Putri et al., 2024).

Furthermore, Self-regulated learning (SRL) is considered an important factor of SDL and it mostly emphasizes on multiple sources such as, if the students have better SRL skills, they are more likely to properly manage time, regulate effort and make ethical leaning decisions (Broadbent & Poon, 2015; Jivet et al., 2020). Moreover, the weaker the SRL skills are the more the students tend to procrastinate, experience academic burnout, or rely excessively on shortcuts, including AI-generated text (Broadbent & Poon, 2015; Jivet et al., 2020).

Based on the collective findings of the previous studies, SDL in the digital age, with AI-mediated environments, demonstrates more pedagogical potential yet entailing a plethora of ethical risks. The risks

tend to grow if the learners have no proper guidance, institutional clarity, or adequate SRL competencies. However, the literature, draws strong remarks on integrating AI in South Asian higher education, with careful ethical scaffolding, but not simply technological adoption.

Arksey and O'Malley proposed the scoping review approach for conducting literature review-based studies, which uses a systematic method of searching the literature and summarizing it with five stages. (Levac et al., 2010; Arksey and O'Malley, 2005) It's about defining a research question, identifying relevant studies, choosing them, charting data, and summarizing and reporting the results. As their name suggests, scoping reviews determine the scope of literature and studies available on a certain topic and give an overview. Hence, this study chose a scoping review approach due to no stable, established evidence base for using AI in SDL, plagiarism, and ethics. It is ideal to conduct a scoping review when mapping a large and fragmented field.

2.1.1 First Step: Identifying the Research Questions

The study follows the methodological guidance of Arksey and O'Malley (2005) and developing a scoping review which initiates with the formation of the research questions. The study aims at establishing conceptual clarity and ensuring that the search strategy is properly captured in a broad but relevant spectrum of previous literature. According to Arksey and O'Malley (2005), this review aimed to clarify concepts, and examine the extent of research rather than to achieve coverage. Arksey and O'Malley's methodological approach to the study was outlined in five stages: identifying the research question, identifying relevant studies, selecting studies, charting the data, and collating and synthesising the results. After that, the final sample was narrowed down to 15 relevant articles based on the review objectives. As a result of this iterative selection process, we were able to focus on studies that provided sufficient depth, methodological clarity, and relevance to meet the research question, which is an accepted feature of scoping reviews.

However, as a result of the rising prominence in the area of SDL and rapid integration of AI, it brings the focus to emerging ethical concerns starting with plagiarism, academic dishonesty, etc. with special focus to the South Asian region. With that background set, it is necessary to frame questions that reflected both empirical and conceptual developments in the field.

The study will address the following questions,

1. What is the current extent and nature of scholarly work addressing ethical challenges within AI-supported self-directed learning?
2. Which key themes emerge in existing studies concerning students' use of AI tools in SDL contexts?
3. What individual, pedagogical, and institutional factors are identified as shaping ethical behaviour in AI-mediated SDL?

The questions pose a wider scope and the intention is to capture the conceptual, theoretical, and empirical sources as recommended for the scoping reviews. At the preliminary level, reading literature elaborated that this is quite a heterogeneous field spanning across multiple disciplines including psychology (motivation and SRL), technology adoption, learning analytics, academic integrity, and pandemic-induced online learning transitions. Due to this wide range of arenas covered in the topic, questions were aiming broad, not to overlook relevant perspectives (Arksey and O'Malley, 2005)

However, the overall research questions were developed to map the current landscape of ethics in AI-supported SDL, identify thematic patterns, and highlight gaps particularly relevant to South Asian higher education. This step provided the necessary structure for organising the review and interpreting findings within a rapidly evolving educational and technological context.

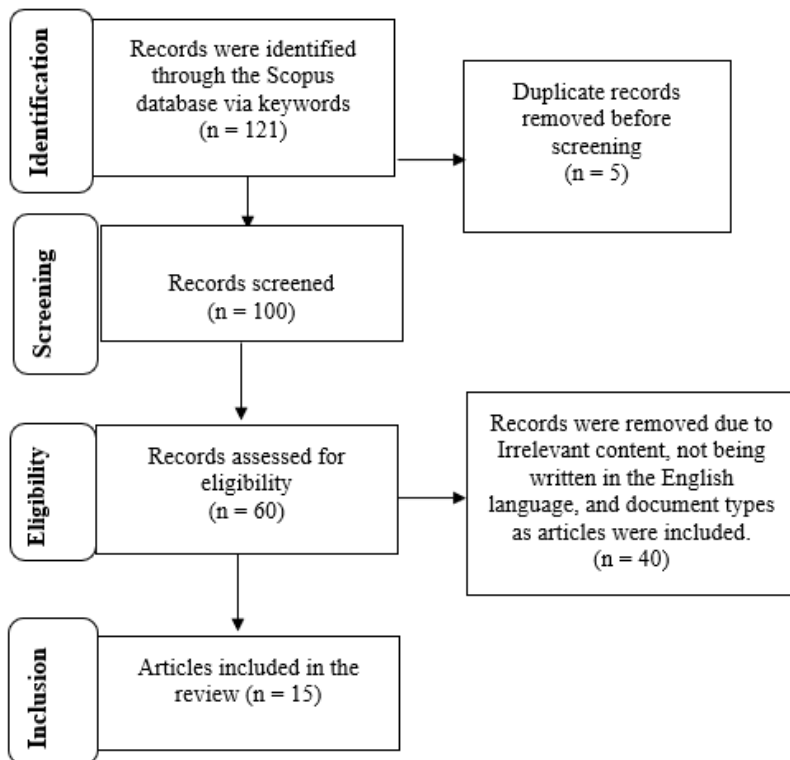
2.1.2 Second Step: Identifying Relevant Studies

Furthermore, inclusion of both AI based literature along with the studies on SDL, blended learning, and academic integrity were the most essential ones as they often clash with the ethical challenges more implicitly. In order to avoid missing most relevant studies, the authors conducted a preliminary literature scan, and the search strategy was finalized. In this study, search keywords were formulated based on the research objectives and three research questions.

2.1.3 Third Step: Selection of the Studies

This third step outlines how to select the studies, and a general idea of the preliminary search results using search keywords based on the search, which is performed by using the Scopus database. Overall, the articles were selected considering the years 2020 to 2025. Figure 1 further illustrates the flow chart of the literature search process. We selected 15 articles following a rigorous, multi-stage screening process to ensure methodological quality. Full-text articles were screened against predefined inclusion and exclusion criteria after

duplicates were removed. Studies excluded if they did not directly address the research question, lacked sufficient methodological detail, were not peer-reviewed, or didn't meet quality appraisal thresholds. South Asian and non-South Asian studies were clearly distinguished to account for contextual, cultural, and healthcare-system differences. In South Asian studies, sociocultural norms, economic conditions, and healthcare access were analyzed separately to capture region-specific factors not found in non-South Asian studies. To provide a global perspective and facilitate regional comparisons, non-South Asian studies were synthesized independently.



Source: Developed by author

We have used keywords such as SDL OR self-directed learning AND Independent learning, Self-regulated learning OR SRL AND Autonomous learning AND Self-managed learning OR AI Artificial intelligence AND Plagiarism AND Ethical Challenges AND South Asia AND University OR Tertiary Education Institutes. In order to remain within the scope of the study, the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) 2020 guidelines were incorporated (Liberati et al., 2009).

3.4 Fourth Step: Data Charting and Collation

Data charting and collating data were done based on the selected 15 articles using the scoping review framework of Arksey and O'Malley (2005). Each article summary includes the source, year, author, title, key concept, theory, methodology, and key findings in the workbook. The inclusion criteria only includes journal articles and articles published between year 2020 to 2025. Further journal articles published in English. The Scopus database was searched using stated search keywords and 121 records were found. Before screening, we removed 5 duplicate records. In addition, 100 records were screened according to PRISMA 2020. Six records were removed because they had irrelevant content, weren't written in English, and weren't journal articles. Based on the full-text review of all selected documents, 15 journal articles were used as the final sample size.

3.5 Fifth Step: Summarising and Reporting Findings

In Arksey and O'Malley's (2005) scoping review, the fifth and final step is to summarize and report findings. Thematic analysis was used to discover common themes in the literature on the ethical challenges in self-directed learning: plagiarism and the role of Artificial Intelligence in South Asia. Study results suggest that SDL's Autonomy, Motivation, and Psychological Experience affect learners' internal processes through which they take ownership of their learning, especially in South Asia. Traditional South Asian university emphasizes teacher-led instruction, rote learning, and hierarchical relationships between teachers and students. Because of this, learners have fewer opportunities to make independent decisions. Introducing autonomy can change a student's perception of responsibility, control, and confidence in the learning process. Academic dishonesty and AI-Supported Learning influence how learners develop critical thinking. Learning Self-Regulated Learning (SRL) skills, unequal access, digital literacy, and the cultural context of South Asia should be emphasized, since these factors influence how learners engage with modern, technology-supported education.

Theme 1: Autonomy, Motivation, and the Psychological Experience of SDL

Based on the selected literature, many studies have focussed on autonomy as a psychological driver of SDL but the issue underlying this is that autonomy without guidance can create ethical uncertainty.

According to Schweder & Raufelder, (2024), SDL satisfies the students innate needs for having autonomy and reassurance on competence which drives the factors towards increasing the intrinsic motivation. Resonating with this finding, Du & Alm, (2024), elaborates that when using ChatGPT for language learning, the use of AI tools itself, empowers the learner to enhance autonomy and confidence by providing a non-judgmental space to ask questions and explore ideas. Furthermore, when autonomy is increased, it also shifts the responsibility of learning on the students and due it the students tends to feel inadequately prepared, with special regards to pandemic related studies, it explains the fact that sudden transitions to SDL often left students overwhelmed, anxious, and confused about expectations (Mohebi Amin et al., 2024). However, the sum of previous studies enlighten the fact that autonomy without structure generates an ethical ambiguity in students, who in return feel pressured which creates the tendency to rely on AI-generated content without fully understanding the academic implications.

Theme 2: The Rise of AI-Supported Learning and Its Ethical Tensions

Despite of AI tools being recognized for enhancing personalization, formative feedback, and access to knowledge (Divito et al., 2024; Lee & Zhai, 2024), they raise the pressing concerns about plagiarism, fabricated content, and diminished critical thinking which once again stirs the worry of educators about students getting less cognitive development and losing the authentic learning (Woods & Copur-Gencturk, 2024). Based on the literature, the most critical AI-related dilemmas were, dependence and cognitive offloading which implies that students are becoming more reliant on AIs for explanations, answers or worse case full assignments (Lee & Zhai, 2024), and blurred boundaries between assistance and plagiarism which indicates that due to AI generated texts are being original students have a tendency to mistake them into accurate content and lose the practice of referencing or using citations (Du & Alm, 2024). However these common dilemmas have a higher concentration in the South Asia and the institutional policies with regards to AI use remain rather inconsistent or unclear or inadequate (Pregoner & Baguio, 2024).

Theme 3: Academic Dishonesty, Plagiarism, and the Hidden Curriculum

Hidden curriculum is brought into play with the implementation of virtual instruction and it entailed a lot of ethical issues such as academic dishonesty, including plagiarism, unauthorized

collaboration, and misuse of online tools (Mohebi Amin et al., 2024). However, these issues intensifies with the students having to struggle with multi-faceted challenges including juggling digital fatigue, limited support, and ambiguous expectations often resorted to shortcuts (Du & Alm, 2024; Yilmaz, 2017). Not only that, but also, when it comes to blended learning contexts, it indicates that students' readiness and technological confidence directly influence ethical behaviour and when the students are feeling underprepared for online tasks, they are more likely to use unethical workarounds (Pregoner & Baguio, 2024). However, the interplay between AI and ethical ambiguity is particularly important and students face a nuance in trying to grasp the difference between originality and intellectual authenticity in AI generated content.

Theme 4: SRL Skills as Predictors of Ethical Behaviour in SDL

When focussing on SRL, it focusses repetitively on how the students with stronger SRL skills have the better capacity to manage time and develop metacognition while regulating effort and seeking help when needed to perform better academically (Broadbent & Poon, 2015; Jivet et al., 2020). This highlights the fact that SRL skills correlate with the ethical learning behaviours. For instance, if the learners is more of a procrastinator, they tend to use LMS environments for superficial learning and integrity violations (Cerezo et al., 2016), whereas the students who are capable of reflecting on their learning analytics, tend to make ethical decisions about using technology (Jivet et al., 2020). This draws upon the summed up conclusion that the weaker the SRL skills are the more the learner misuses AI.

Theme 5: Unequal Access, Digital Literacy, and Cultural Context in South Asia

With special focus on South Asia, through a few academic studies, it has been identified that in Indonesia, Iran, and the Philippines, technological readiness is uneven which implies that digital inequality is a pressing concern and a pervasive challenge (Mohebi Amin et al., 2024; Putri et al., 2024). In terms of limited or unreliable, students face additional pressure, making them more likely to rely on AI tools simply to "keep up" (Divito et al., 2024; Du & Alm, 2024; Lee & Zhai, 2024). When considering the South Asian cultural norms, it is usually teacher centered instruction and throughout the history has not evolved significantly and it impacts how the students perceive SDL (Pregoner & Baguio, 2024). When the students have to take the sole

responsibility of the learning, the abrupt shift in learner-teacher dynamics makes the student have doubtful behaviour towards ethical concerns as the existing system has not prepared them for autonomous decision-making.

4. DISCUSSION OF THE FINDINGS

Based on the previous studies and the rigorous literature analysis, the scoping review majorly narrows down four prominent findings. Firstly, SDL systems supported by AI, has the ability to improve motivation and learner competency as long as there is proper guidance. AI can be used to promote autonomy, competence and personalized learning (Du & Alm, 2024; Lee & Zhai, 2024) but unless it is properly monitored by explicit policies, the students may come across prolonged ethical uncertainty. Secondly, ethical risks tend to increase when the students do not have or lack SRL skills which is further justified by research. Poor time management, procrastination, and low metacognition correlate with unethical decision-making (Broadbent & Poon, 2015; Cerezo et al., 2016) and it is important to promote and initiate SRL practices among undergraduates. Furthermore, the third finding extends the teachers' requirement to acquire support to navigate AI integration with responsibility. A plethora of studies have focussed on how educators worry about diminished cognitive engagement and rising plagiarism of students (Mohebi Amin et al., 2024; Woods & Copur-Gencturk, 2024) which calls for more developmental initiatives. Last but not least, the fourth finding sheds light on the South Asian context and how the particular geographical focus brings attention to context-sensitive AI ethics frameworks. Because of varied digital access and differing academic cultures, students in South Asia encounter unique ethical dilemmas.

5. RECOMMENDATIONS

The authors channel the focus of initiatives on developing clear institutional AI-use guidelines that distinguish acceptable assistance from plagiarism. There should be policies which are communicated repeatedly and integrated into coursework. Furthermore embedding SRL training modules into first-year university programs, including digital literacy, time management, ethical reasoning, and citation practices for AI-generated content can reduce the major ethical breaches of students SDL practices. Not only students but also the faculty should be educated on handling the tech-based SDL systems

with special focus on AI integration. Providing the educators with development workshops on AI-assisted teaching, ethical assessment design, and strategies for detecting AI misuse, the students can be properly guided and ethical dilemmas can be reduced. With regards to the special focus on South Asian region. Regional ethical guidelines should be implemented which accounts for the cultural norms, technological disparities, and institutional capacities, ensuring equitable and realistic expectations.

6. MANAGERIAL IMPLICATIONS

Learning materials should be aligned with learners' cultural backgrounds when designing self-directed learning activities, according to these findings. It is critical that SDL resources reflect personalized learning experiences that resonate with regional cultural norms (such as familiar community settings, local symbols, or culturally meaningful environments) in order to capture learners' attention and enhance their curiosity, as well as emotional values (such as feeling relaxed, confident, and supported during the learning process). As an example, in contexts with a high level of uncertainty avoidance, self-directed learning content that emphasizes the importance of clarity, stability, and trust in the learning pathway may prove to be more effective, provided it is aligned with the overall learning objectives of the context. It is important to promote and initiate SRL practices among undergraduates to decrease poor time management, procrastination, and low metacognition (Broadbent & Poon, 2015; Cerezo et al., 2016). Thirdly, teachers need support to navigate AI integration responsibly, according to the third finding.

7. CONCLUSION AND LIMITATIONS

This study elaborates the latest concerns about AI-supported SDL in South Asia in the form of a scoping review. Based on the findings it can be concluded that, the subject of interest could be immensely promising while simultaneously being profoundly challenging in terms of ethical concerns. Based on the studies subjected to the review, previous literature collectively show that while autonomy, digital tools, and AI applications enrich learning experiences, they also introduce risks related to plagiarism, overreliance, and academic

dishonesty. Building upon these constructs, it can be identified that these challenges are based upon the students' self-regulated learning capacities, teachers' pedagogical readiness, and institutional clarity regarding AI use. Upon identifying the dire need to establish an intentional ethical frameworks that balance innovation with integrity can foster a positive and growing atmosphere for the SDL systems especially in cultures where SDL systems are on the growth phase or emerging. The study only covers 19 papers which might have a constraint on the scope, contexts, and methodologies as this only reviews the said amount of studies. Majority of the studies reviewed were outside South Asia, therefore the contextual interpretation could be questionable and the rapid changes in AI technology may outpace existing literature, meaning ethical challenges will continue to evolve. Beyond these limitations, the study indicates that based on previous literature South Asian higher education institutions are at a pivotal moment and attending to the ethical challenges in terms of AI-integrated SDL is of utmost importance. Not only it requires the support of educators, but it calls for collaboration among policy-makers, and students so that AI becomes a tool for empowerment rather than a source of academic risk.

REFERENCES

- Arksey, H., & O'malley, L. (2005). Scoping studies: towards a methodological framework. *International journal of social research methodology*, 8(1), 19-32.
- Broadbent, J., & Poon, W. L. (2015). Self-regulated learning strategies & academic achievement in online higher education learning environments: A systematic review. In *Internet and Higher Education* (Vol. 27, pp. 1–13). Elsevier Ltd. <https://doi.org/10.1016/j.iheduc.2015.04.007>
- Cerezo, R., Sánchez-Santillán, M., Paule-Ruiz, M. P., & Núñez, J. C. (2016). Students' LMS interaction patterns and their relationship with achievement: A case study in higher education. *Computers and Education*, 96, 42–54. <https://doi.org/10.1016/j.compedu.2016.02.006>
- Divito, C. B., Katchikian, B. M., Gruenwald, J. E., & Burgoon, J. M. (2024). The tools of the future are the challenges of today: The use of ChatGPT in problem-based learning medical education.

- Medical Teacher*, 46(3), 320–322.
<https://doi.org/10.1080/0142159X.2023.2290997>
- Dr. Lohans Kumar Kalyani. (2024). The Role of Technology in Education: Enhancing Learning Outcomes and 21st Century Skills. *International Journal of Scientific Research in Modern Science and Technology*, 3(4), 05–10.
<https://doi.org/10.59828/ijrmst.v3i4.199>
- Du, J., & Alm, A. (2024). The Impact of ChatGPT on English for Academic Purposes (EAP) Students' Language Learning Experience: A Self-Determination Theory Perspective. *Education Sciences*, 14(7).
<https://doi.org/10.3390/educsci14070726>
- Du, L., & Lv, B. (2024). Factors influencing students' acceptance and use generative artificial intelligence in elementary education: An expansion of the UTAUT model. *Education and Information Technologies*, 29(18), 24715-24734.
- Holmes, W., & Tuomi, I. (2022). State of the art and practice in AI in education. *European journal of education*, 57(4), 542-570.
- Jivet, I., Scheffel, M., Schmitz, M., Robbers, S., Specht, M., & Drachsler, H. (2020). From students with love: An empirical study on learner goals, self-regulated learning and sense-making of learning analytics in higher education. *Internet and Higher Education*, 47. <https://doi.org/10.1016/j.iheduc.2020.100758>
- Lee, G. G., & Zhai, X. (2024). Using ChatGPT for Science Learning: A Study on Pre-service Teachers' Lesson Planning. *IEEE Transactions on Learning Technologies*, 17, 1683–1700.
<https://doi.org/10.1109/TLT.2024.3401457>
- Lou, Y. (2023). Exploring the application of ChatGPT to English teaching in a Malaysia primary school. *Journal of Advanced Research in Education*, 2(4), 47-54.
- Mitra, N. K., & Chitra, E. (2024). Glimpses of the Use of Generative AI and ChatGPT in Medical Education. *Education in Medicine Journal*, 16(2).
- Mohebi Amin, A., Rabiei, M., Yazdi Amirkhiz, S. Y., & Shomoossi, N. (2024). We are still to learn from our learners: A hidden curriculum developed during the covid-19 pandemic. *Teaching*

- and Teacher Education*, 137.
<https://doi.org/10.1016/j.tate.2023.104390>
- Mthethwa-Kunene, K., Rugube, T., & Maphosa, C. (2021). Rethinking Pedagogy: Interrogating Ways of Promoting Deeper Learning in Higher Education. *European Journal of Interactive Multimedia and Education*, 3(1), e02204. <https://doi.org/10.30935/ejimed/11439>
- Pregoner, J. D. M., & Bagoio, J. B. (2024). Learning Strategies and Readiness towards Blended learning in English Subjects as Predictors of Students' Satisfaction during the COVID-19 Pandemic. *Asian Journal of Education and Social Studies*, 50(4), 170–184. <https://doi.org/10.9734/ajess/2024/v50i41321>
- Putri, S. A., Asbari, M., & Hapizi, M. Z. (2024). Perkembangan Pendidikan Indonesia: Evaluasi Potensi Implementasi Merdeka Belajar. *JOURNAL OF INFORMATION SYSTEMS AND MANAGEMENT*, 03(02). <https://jisma.org>
- Rashid, A. B., & Kausik, M. A. K. (2024). AI revolutionizing industries worldwide: A comprehensive overview of its diverse applications. *Hybrid Advances*, 7, 100277.
- Rudolph, J., Sam, C. Y., & Tan, S. (2024). From crisis to learning leadership? Singapore's unique journey through COVID-19 and beyond. *The Palgrave Handbook of Crisis Leadership in Higher Education*, 469-490.
- Schweder, S., & Raufelder, D. (2024). Does changing learning environments affect student motivation? *Learning and Instruction*, 89. <https://doi.org/10.1016/j.learninstruc.2023.101829>
- Woods, P. J., & Copur-Gencturk, Y. (2024). Examining the role of student-centered versus teacher-centered pedagogical approaches to self-directed learning through teaching. *Teaching and Teacher Education*, 138. <https://doi.org/10.1016/j.tate.2023.104415>
- Yew, E. H. J., & Goh, K. (2016). Problem-Based Learning: An Overview of its Process and Impact on Learning. In *Health Professions Education* (Vol. 2, Issue 2, pp. 75–79). King Saud bin Abdulaziz University. <https://doi.org/10.1016/j.hpe.2016.01.004>

- Yilmaz, R. (2017). Exploring the role of e-learning readiness on student satisfaction and motivation in flipped classroom. *Computers in Human Behavior*, 70, 251–260. <https://doi.org/10.1016/j.chb.2016.12.085>
- Yongjun, L., Xinyue, L., & Lizheng, W. (2025). Generating creativity through ChatGPT: an empirical investigation in open innovation platforms. *Information Technology and Management*, 1-16.

INVESTIGATING THE BARRIERS AFFECTING CONSUMERS' PURCHASE INTENTION TOWARD METAVERSE PRODUCTS IN SRI LANKA: AN INNOVATION RESISTANCE THEORY PERSPECTIVE

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ABSTRACT

By enabling immersive experiences through virtual reality, augmented reality, and blockchain technologies, the metaverse's explosive growth presents significant opportunities for the global industries. Nevertheless, the adoption of the metaverse remains low in many developing nations, including Sri Lanka, despite its potential. Therefore, this paper's main aim is to investigate the impact of consumer intention to use metaverse products in Sri Lanka, utilizing Innovation Resistance Theory. The current study adopts a deductive research design and a self-administered questionnaire. Under the purposive sample technique, data were collected from 495 individuals who were either already familiar with AR/VR-based mixed reality technologies or those who were aware of these technologies but had not yet used them. Data were analyzed using SmartPLS 4.0 to assess

both the measurement and structural models. The results revealed that value, risk, and traditional barriers have a significantly negative impact on consumer intention to use metaverse products. Surprisingly, usage and image barriers do not exhibit a significant impact. Additionally, individuals' innovativeness serves as a positive influencer, weakening the negative impact of traditional barriers on consumer intentions to use metaverse products. Findings will offer useful information on issues that hinder the adoption of metaverse product experiences by consumers, helping to develop strategies and to overcome and facilitate widespread usage of metaverse technologies in Sri Lanka.

Keywords: Barriers, Innovation Resistance Theory, Innovativeness, Metaverse products, Purchase intention

1. INTRODUCTION

Metaverse products (MR) have developed significantly in recent years, allowing users to configure digital avatars that interact with virtual locations, objects, and other users within the metaverse, a 3D virtual environment (St€ohr et al., 2020; Yoo et al., 2023; Nie et al., 2025). As a result, MR is a significant digital transformation, offering an immersive experience that leverages augmented reality (AR), virtual reality (VR), and blockchain technology. These technologies provide a digital space where users are able to socialize, entertain themselves, and even make economic transactions. Especially during COVID 19 period, more people experimented and used physical artefacts in their virtual lives as well as digital tools in their real lives. Therefore, the development of MR is driven by the sharp increase in people's everyday lives. Moreover, different industries implement MR in their operations, especially tourism and hospitality, education, health, entertainment, retail, and many high-tech companies, such as Facebook, Sony, and Apple, have invested billions of dollars in research and development for these products. Considering Sri Lanka, MR is still emerging, and brands like MAS, Brandix, and Dialog are launching immersive platforms for shopping and socializing. Very recently, Ritzbury launched a new chocolate packaging, including a VR experience for its consumers. According to Mednis et al. (2023), metaverse virtual reality becoming the blooming trend in Sri Lanka fashion industry and most international business are now investing their design capabilities with new digitalization investments.

According to Fashionating World (2022) in 2030, metaverse will roughly 25% help fashion industry earnings.

However, despite the rapid advancements in hardware and software, metaverse adoption is still in its nascent stages. The global metaverse market, estimated to reach USD 107 billion by 2025, is expanding, with investments from tech giants like Meta (formerly Facebook) and Microsoft. Yet, the consumer adoption in regions like Sri Lanka lags. According to Grand View Research, the metaverse market is projected to grow at a compound annual growth rate (CAGR) of 46.4%, but challenges persist, particularly in developing economies (Transformation, 2022). Further confirming, Mendis et al. (2023) concluded that there is significant interest and potential for growth in MR, but consumer adoption is currently low. This slow uptake in Sri Lanka can be attributed to several barriers, including limited access to high-end digital infrastructure, financial constraints, and cultural resistance to new technological paradigms (Abdulameer, 2025). If adoption rates remain low, the digital divide is likely to expand further, with only wealthy urban dwellers able to enjoy the fruits of virtual worlds, while the population of developing nations, such as Sri Lanka, remains left out (Nie et al., 2025). Moreover, unless these barriers are mitigated, each and every sector could fail to take advantage of the economic prospects of the metaverse, as it has been in other nations that have witnessed the fast growth of the metaverse (Chakraborty, 2023). In case the obstacles on the way to adopting the metaverse remain, Sri Lanka will be left behind in the world competition to create high-value digital sectors. Such a lack of engagement likely would kill innovation in the local industry and block the possibility of creating new digital content, experiences, and economic prospects. Moreover, the Sri Lankan players could lose the chance to play in the virtual economies of the world, which increases the socio-economic disparities between the urban and rural populations (Huang, 2025).

Therefore, the objective of the current study is to find out and discuss the main barriers that prevent the adoption of metaverse products in Sri Lanka. To achieve this, the current research used the Innovation Resistance Theory (IRT) as a widely used one, and IRT categorized barriers to innovative technologies into five types, including usage barriers, value barriers, risk barriers, tradition barriers, and image barriers. Additionally, based on the IRT framework, we investigated

the effects of individuals' innovativeness as a moderator. Finally, this research will offer useful information on issues that hinder the adoption of metaverse experiences by consumers. Findings will be used in planning how the identified barriers can be overcome, and widespread usage of metaverse technologies in the Sri Lankan market can be achieved.

2. LITERATURE REVIEW

2.1 Metaverse Product Adoption

A growing number of research studies explore factors influencing users' intentions to use the metaverse, primarily from a technological perspective. Studies have applied theories such as the Stimulus-Organism-Response (S-O-R) model and Unified Theory of Acceptance and Use of Technology (UTAUT) to explain positive motivators of adoption. Further, Jafar et al. (2023) found that remote metaverse experiences enhance perceived product knowledge and increase product intentions. Wang et al. (2023) found that entertainment and educational experiences significantly improve intentions to engage with metaverse platforms. Similarly, Teng et al. (2022) showcased that performance expectancy, effort expectancy, social influence, facilitating conditions, and learner satisfaction largely affect continued use of educational metaverse platforms.

In contrast, research on barriers to metaverse usage remains limited. Braguez et al. (2023) discussed potential limitations in education platforms. Calli and Ediz (2023) recognized that technical and functional challenges exist through text mining of low-rated gaming reviews. Gupta et al. (2024) introduced a conceptual framework categorizing barriers into six main categories, such as security and privacy, governance and standardization, infrastructure, user psychology, feasibility, and organizational culture. However, all these studies lack empirical testing.

Significantly, consumer resistance has been underexplored despite its vital role in adopting innovations. Generally, resistance occurs when consumers are required to transition from a known state to an unknown state (Ram, 1989; Ram & Sheth, 1989). Prior studies highlight the adoption of drivers; they usually ignore negative perceptions, fear, and uncertainty that lead to resistance or rejection

(Gupta et al., 2024). Most of the resistance theories highlight that consumers must overcome perceived risks and psychological barriers to accept innovations. (Huang et al., 2021; Leong et al., 2021). Therefore, investigating innovation resistance is essential to understanding the reluctance to adopt the metaverse.

2.2 Innovation Resistance Theory (IRT)

Innovation Resistance Theory (IRT) was first conceptualized by Ram (1987) and refined by Ram & Sheth (1989) and serves as a strong explanatory model outlining the reasons why consumers resist using new technologies or innovations despite the possible benefits that they may provide. Unlike adoption-focused models, IRT emphasizes user-centered reasons for rejection rather than acceptance (Tang & Chen, 2022). It is categorized into functional and psychological barriers. Some functional barriers are use, value, and risk. Psychological barriers include tradition, image (Talke & Heidenreich, 2014). Its effectiveness has been validated through meta-analytic and cross-cultural research (Leong et al., 2021), confirming its applicability across diverse contexts.

This theory has been broadly applied to study resistance towards numerous technologies such as online learning (Ma & Lee, 2019), mobile ticketing (Chen et al., 2022), fitness applications (Chakraborty et al., 2022), mobile payments (Migliore et al., 2022), digital contact tracing (Prakash & Das, 2022), mobile banking (Klyton et al., 2021), cryptocurrencies (Shishan et al., 2022), and food delivery platforms (Verma et al., 2023). Based on these bases, the current study adopts IRT to examine barriers to metaverse products through usage, value, risk, tradition, and image barriers.

2.3 Usage Barriers

The usage barrier refers to instances where metaverse technologies are inconsistent with users' prior experiences, values, and practical needs. Metaverse requires devices such as VR headsets, AR glasses, and computers. However, many of these devices currently reporting as devices show poor usability and limited practical utility (Laurell et al., 2019). The high complexity of the devices can activate technological anxiety (Lindner et al., 2017), which will lead to less learning and usage of technologies (Klein et al., 2020). The nature of

the metaverse devices is significantly different from most familiar smartphone experiences, which leads to users avoiding usage by users. All this evidence is leading to substantial obstacles to the effective use of metaverse products. Therefore, the hypothesis proposed:

H1: Usage barrier negatively impacts consumers' intention to use metaverse products.

2.4 Value Barriers

The value barrier arises when consumers are not expecting to use metaverse products because they do not perceive them as providing greater value compared to existing products. Although various metaverse platforms have emerged in gaming, social, and work environments, their technology remains immature, content is limited, and character design is still underdeveloped (Cheng et al., 2022; Park & Kim, 2022). Because of all these reasons, users do not experience greater practical or entertainment value from these platforms. Furthermore, adopting the metaverse requires expensive hardware such as VR headsets. This could create a strong financial barrier (Watson, 2021). Thus, the study proposes the hypothesis that:

H2: Value barrier negatively impacts consumers' intention to use metaverse products.

2.5 Risk Barrier

The risk barrier refers to users' perceptions of uncertainty and potential harm associated with using metaverse products. Metaverse experiences often require extensive personal data reveal, which enhances the privacy and security risk. Due to weak access control mechanisms, intruders can covertly steal user data during metaverse use, making breaches difficult to detect (Syal & Mathew, 2020). Data breaches, unauthorized access, and electronic fraud are cybersecurity risks identified by past research (Qamar et al., 2023). Therefore, the study proposed the hypothesis:

H3: Risk barrier negatively impacts consumers' intention to use metaverse products.

2.6 Tradition Barriers

The tradition barrier refers to resistance that occurs when metaverse products conflict with consumers' established habits and traditional ways of interacting. When compared to typing or voice-based communication on social media, metaverse social interactions require specialized hardware such as VR headsets. That will create confusion with traditional consumer practices (Bhatia, 2021). Metaverse shopping enables consumers to experience products in three-dimensional virtual environments, which differ from traditional real-world experiences and conventional web-based shopping practices (Hollensen et al., 2023; Kar & Varsha, 2023). Even though the metaverse options are more innovative, most consumers believe traditional physical and online shopping practices (Bourlakis et al., 2009). Therefore, the study proposed the hypothesis:

H4: Tradition barrier negatively impacts consumers' intention to use metaverse products.

2.7 Image Barriers

The image barrier refers to consumer resistance caused by negative perceptions and reputational images associated with metaverse products. Due to underdeveloped technology, a small user base, and high entry barriers, users have formed negative opinions of the metaverse (Agbaghe, 2022). Poor character design, restricted functioning, and a dearth of interesting circumstances are further unfavourable opinions (Tangermann, 2022). Additionally, the use of VR headsets has been connected to eye fatigue, pain, and anxiety, all of which contribute to unfavourable consumer perceptions (Stern, 2022). Therefore, the study proposed the hypothesis:

H5: Image barrier negatively impacts consumers' intention to use metaverse products.

2.8 Moderating Effects of Innovativeness

Innovativeness in the study refers to consumers' propensity to swiftly accept novel items and their openness to experimenting with new technology (Sowmya et al., 2023). It is anticipated that consumer innovation would both directly affect consumers' intentions to use metaverse products and mitigate the effects of different barriers. These obstacles, which could hinder later adoption, include usage,

value, tradition, danger, and image barriers. According to Agrawal and Prasad (1998), highly innovative consumers typically have a more favourable opinion of new product features, even if they are costly or have limited technical capabilities. Conversely, less inventive customers are less inclined to attempt metaverse items and are more adversely impacted by barriers (Hoonsopon, 2016). Therefore, the study proposes the following hypothesis:

H6: Innovativeness positively impact consumers' intention to use metaverse products.

H7: Innovativeness moderates the effects of the image barriers on consumers' intentions to use metaverse products.

H8: Innovativeness moderates the effects of the tradition barriers on consumers' intentions to use metaverse products.

H9: Innovativeness moderates the effects of the risk barriers on consumers' intentions to use metaverse products.

H10: Innovativeness moderates the effects of the value barriers on consumers' intentions to use metaverse products.

H11: Innovativeness moderates the effects of the usage barriers on consumers' intentions to use metaverse products.

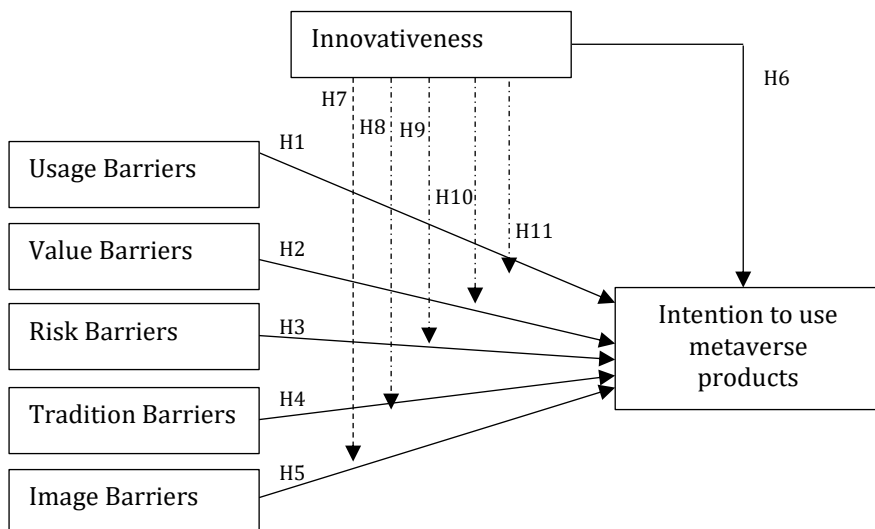


Figure 1: Conceptual model
Adopted from Nie et al. (2025)

3. METHODOLOGY

Positivism seeks to identify hypotheses through empirical evidence (Thornhill, 2016). Therefore, the philosophy employed in this work is positivism, utilizing a quantitative research approach. Furthermore, researchers have conducted data with minimal inference in a non-contrived setting. To test the proposed model in this study, an online questionnaire survey was administered using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Since there is no credible source to access MR utilization, the population of the current study is the Sri Lankan consumers who are potential consumers. Because many consumers may not have used MR tech yet, researchers utilized both: 1. Those aware/experienced with AR/VR/Virtual reality (virtual try-in, 3D showroom, VR demos) and 2. Those aware but not experienced. As mentioned above, the introduction section included two screening questions at the beginning and provided information about the research purpose, as well as assurances of the protected privacy of respondents. As a result, researcher selected purposive sampling technique and 495 respondents to analyze the data. The sample size of 384 is based on the Krejcie and Morgan (1970) sample size determination table, but Structural Equation Modelling (SEM) suggests that 300-500 respondents is recommended to achieve stable and valid model estimates (Hair et al., 2019). This recommendation aligns with the guidelines by Hair et al. (2019) for structural equation models, ensuring sufficient statistical power and reliability. The questionnaire was pretested using academic and subject expertise to ensure clarity, and a few items were modified based on their comments. After collecting the data, the data are analyzed using SmartPLS 4.0 to assess both the measurement and structural models.

4. DATA ANALYSIS & RESULTS

4.1. Descriptive analysis

Descriptive analysis was carried out to present an overall profile of the respondents in terms of gender, age group and education. The sample was primarily composed of young participants, most of whom were between 18 and 27 years of age, reflecting a population well aligned with emerging digital environments. Representation across gender was reasonably balanced, while the majority had received

undergraduate-level education, indicating that respondents possessed a foundational academic background suitable for understanding and engaging with metaverse-related technological concepts.

Table 1: Sample demographics (N = 495)

Demographics	Category	Count	Percentage
Gender	Male	262	52.9%
	Female	222	44.9%
	Prefer not to say / Other	11	2.2%
Age Group	18–22 years	231	46.7%
	23–27 years	176	35.6%
	28–32 years	58	11.7%
	Above 32 years	30	6.0%
Education Level	Undergraduate	289	58.4%
	Postgraduate	132	26.7%
	Diploma/Other	74	14.9%

Source: Survey data

4.2 Model analysis

PLS-SEM was adopted as the primary analytical approach, as it is widely used in contemporary survey-based research to examine theory-driven relationships. Its suitability lies in supporting both theory validation and prediction. Following the recommended procedure, the analysis proceeded in two stages: first assessing the measurement model to establish reliability and validity and then evaluating the structural model to test the proposed hypotheses (Hair et al., 2019).

4.2.1 Measurement Model Assessment

The measurement model was assessed to confirm the reliability and validity of all reflective constructs. Results showed high internal consistency, with Cronbach's alpha and composite reliability values

exceeding the 0.70 threshold, while all AVE values remained above 0.50, confirming convergent validity. Discriminant validity was also established, as HTMT values fell below 0.85 and the Fornell–Larcker criterion indicated that the square root of AVE for each construct was greater than its inter-construct correlations. Cross-loadings further demonstrated clear indicator alignment with their respective constructs. Based on these outcomes, the measurement model was considered statistically robust and suitable for progression to structural model analysis (Refer to Table 2: Reliability Measures and Validity Measures).

Table 2: Reliability Measures and Validity Measures

	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
Image Barrier (IB)	0.888	0.891	0.748
Intention to use (IUMG)	0.930	0.931	0.827
Innovativeness (IV)	0.911	0.911	0.788
Risk Barrier (RB)	0.897	0.901	0.763
Traditional Barrier (TB)	0.889	0.895	0.750
Usage Barrier (UB)	0.898	0.921	0.764
Value Barrier (VB)	0.894	0.896	0.758

Source: Survey data

4.2.2 Structural Model Assessment

Prior to structural model evaluation, essential prerequisites were checked to ensure the suitability of the data for hypothesis testing. Multicollinearity was assessed using VIF values, all of which remained below the accepted threshold of 5, indicating no collinearity issues. The model also showed strong explanatory power, with an R^2 value of 0.753 for IUMG, reflecting substantial predictive accuracy. Effect size (f^2) values indicated varying degrees of contribution from the predictors, while predictive relevance was confirmed through a Q^2 value of 0.742, showing that the model possesses strong out-of-sample predictive capability.

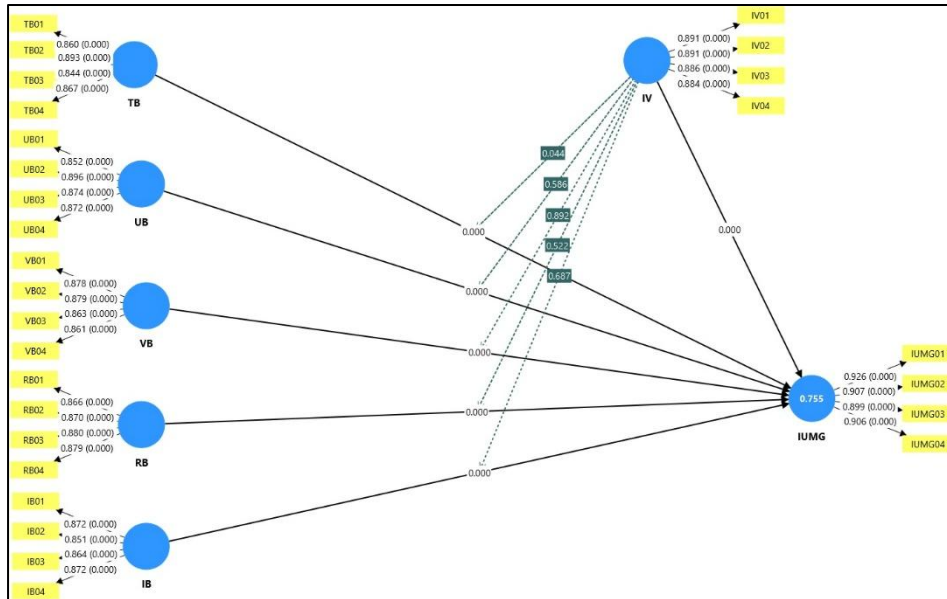


Figure 2: Structural model
Source: author developed

The structural path estimates indicated that Usage barrier had a significant positive influence on consumers' intention to use metaverse products ($\beta = 0.300$, $p < 0.05$). In contrast, value barrier, risk barrier, and tradition barrier each showed a significant negative impact on intention ($\beta = -0.334$, $p < 0.05$; $\beta = -0.310$, $p < 0.05$; $\beta = -0.349$, $p < 0.05$, respectively). Moreover, image barrier exerted a significant positive effect on intention to use metaverse products ($\beta = 0.383$, $p < 0.05$), and innovativeness also displayed a strong positive influence ($\beta = 0.434$, $p < 0.05$). However, most moderation effects of innovativeness with IB, RB, UB, and VB were not significant ($p > 0.05$), while only its interaction with tradition barrier showed a weak yet significant effect ($\beta = 0.045$, $p < 0.05$). Overall, the results show that barriers influence intention differently, with some reducing adoption while positive perceptions and innovativeness help strengthen consumers' willingness to use metaverse products.

5. DISCUSSION OF THE FINDINGS

The Current study's findings revealed that barriers such as value, risk, and traditional barriers have negative impacts on consumers' intention to use metaverse products; in contrast, innovativeness has

a positive effect on consumers' intention to use metaverse products. Furthermore, this study further proved that innovativeness positively moderates the relationship between traditional barriers and usage intention.

This study's findings indicate that barriers such as value, risks, and traditional adoption hurdles significantly impede consumers' intention to engage with metaverse products, aligning with previous research highlighting security and privacy as critical inhibitors (Karunarathna & Buddika, 2023; Gupta et al., 2024). Conversely, consumer innovativeness emerges as a key driver, positively influencing the intention to use metaverse products (Al-Adwan et al., 2023). Furthermore, the analysis substantiates that innovativeness positively moderates the relationship between traditional barriers and usage intention, suggesting that innovative individuals are more likely to overcome these conventional impediments. This indicates that personal innovativeness not only directly influences behavioural intention but also mitigates the adverse effects of perceived barriers by enhancing an individual's self-efficacy and perceived ease of use with novel technologies (Al-Adwan et al., 2023). This moderating effect underscores the importance of targeting early adopters and technologically inclined segments when introducing metaverse products, as their inherent innovativeness can help bridge the gap created by traditional resistance factors (Şahin & Söylemez, 2022). Specifically, a low perceived value where innovations do not offer substantial advantages over existing options has been consistently shown to negatively impact purchase intentions across various new technologies, including online travel agencies and eco-friendly cosmetics, reinforcing its deterrent effect on metaverse product adoption (Al-Maati et al., 2023). The presence of a risk barrier, encompassing concerns such as data security and financial loss, also significantly deters consumer adoption of novel technologies, including blockchain-based systems and NFTs (Li, 2025). Additionally, we discovered that consumers' intentions to use metaverse items are positively impacted by innovativeness. The results of earlier research are consistent with this positive link between innovativeness and usage intention (Bogicevic et al., 2024; Govaerts and Olsen, 2022). According to the research, more inventive consumers are more likely to interact with metaverse items. Highly

innovative users are more inclined to devote time and resources to experimenting with cutting-edge innovations, such as metaverse products. They have an innate curiosity and are willing to learn about new and developing technology (Sowmya et al., 2023). Finally, usage and image barrier showed no significant effect, suggesting that Sri Lankan consumers do not associate the metaverse with a negative social image or cultural mismatch. With global digital trends, people view them as innovative rather than socially questionable. Because of social media, virtual experiences and gaming culture metaverse acts as a futuristic and socially acceptable, and this is further confirmed by researchers. (Ram & Sheth, 1989; Laukkanen, 2016).

6. CONCLUSION & CONTRIBUTIONS

6.1 Theoretical contribution

From a theoretical perspective, this study has contributed to the understanding of IRT, particularly in the context of the metaverse in a developing country like Sri Lanka. While IRT has been widely used to explain consumer resistance to technological innovations, this study provides a fresh perspective by applying it to the metaverse, an emerging, complex technology that combines VR and AR. The findings suggest that functional barriers (such as usability and technical complexity) and psychological barriers (such as societal perceptions) play a significant role in the adoption of metaverse products. The Sri Lankan context further complicates these barriers, with economic and cultural factors influencing consumer decisions. The study contributes to the literature on cultural resistance to new technologies by demonstrating that cultural values in Sri Lanka do not significantly deter metaverse adoption, which contrasts with findings in other regions where traditional values were stronger inhibitors.

6.2 Practical contribution

Firms, developers, and investors who are worried about consumers' intentions to adopt metaverse products should also take note of the findings. This study shows that users' intentions to adopt metaverse products are significantly impacted negatively by value, risk, and tradition barriers. As a result, efforts must be made to lessen these detrimental effects on usage intention. To experience a more realistic

look and feel for the products, the respondents are eager to explore the 3D and VR technology in the metaverse. They believe this will improve customer engagement and ultimately result in better purchasing decisions. Furthermore, given the cost barriers and limited digital infrastructure, businesses should consider localizing their pricing strategies to make the technology more accessible to a broader audience. Offering tiered pricing models or partnering with local providers to enhance digital connectivity could help improve adoption rates, particularly among younger and more digitally savvy consumers. In view of the detrimental effect of traditional barriers on usage intention, retailers could think about establishing creative metaverse product trial stores in busy shopping centres or prominent youth entertainment venues. People frequently assemble in groups at these places, where they can discuss their usage experiences. Customers can progressively become acquainted with metaverse items through trial experiences, and participants can recommend them to their friends and family. Metaverse products can spread further by converting non-users into potential users by utilizing the experiences of current users. Finally, in Sri Lanka, consumers still do not feel secure about new technologies; therefore, marketers should focus more on reducing perceived risk through product trials, transparent data practices, and reliable performance assurance to improve customer confidence. In future research, scholars could explore additional barriers not addressed in this study, such as perceived ease of use, trust in technology providers, and social influence.

REFERENCES

- Abdulameer, I. Y. (2025). Leveraging Industry 4.0 technologies, AI-based supply chain analytics and circular economy practices for net-zero and sustainable supply chain performance: a moderated mediation model. *Supply Chain Management: An International Journal*. <https://doi.org/10.1108/SCM-05-2025-0461>
- Agarwal, R., & Prasad, J. (1998). A conceptual and operational definition of personal innovativeness in the domain of information technology. *Information Systems Research*, 9(2), 204–215. <https://doi.org/10.1287/isre.9.2.204>

- Agbaghe, O. (2022). The metaverse: 5 disadvantages and challenges. *Metarfacial*. <https://metarfacial.com/challenges-disadvantages-metaverse>
- Al-Adwan, A. S., Li, N., Al-Adwan, A., Abbasi, G. A., Albelbisi, N. A., & Habibi, A. (2023). Extending the technology acceptance model (TAM) to predict university students' intentions to use metaverse-based learning platforms. *Education and Information Technologies*, 28(11), 15381–15413.
- Al-Maati, S. A., Rabaa'i, A., Muhammad, N., & Eljamal, E. (2023). Barriers to invest in NFTs: An innovation resistance theory perspective. *Uncertain Supply Chain Management*, 12(12), 601–614.
- Bhatia, S. (2021, March 2). Concerns with privacy in virtual reality. Berkeley iSchool Blog. <https://blogs.ischool.berkeley.edu/w231/2021/03/02/concerns-with-privacy-in-virtual-reality/>
- Bogicevic, V., Liu, S. Q., Kandampully, J. A., Seo, S., & Rudd, N. A. (2024). Experiential marketing to Gen Z: fine-tuning brand experience through virtual reality. *Journal of Hospitality & Tourism Research*, 48(8), 1424–1438.
- Bourlakis, M., Papagiannidis, S., & Li, F. (2009). Retail spatial evolution: Paving the way from traditional to metaverse retailing. *Electronic Commerce Research*, 9(1–2), 135–148. <https://doi.org/10.1007/s10660-009-9030-8>
- Braguez, F., Silva, A. M., & Rodrigues, J. J. P. C. (2023). Educational applications of the metaverse: Opportunities and limitations. *Computers & Education: Artificial Intelligence*, 4, 100120.
- Calli, B. A., & Ediz, Ç. (2023). Top concerns of user experiences in metaverse games: A text-mining based approach. *Entertainment Computing*, 46, 100576.
- Chakraborty, D. (2023). Use of metaverse in socializing: Application of the big five personality traits framework. *Psychology & Marketing*. <https://doi.org/10.1002/mar.21863>
- Chakraborty, S., Paul, J., & Ghosh, A. (2022). Resistance to fitness applications: An innovation resistance theory perspective. *Technological Forecasting and Social Change*, 175, 121373.

- Chen, C.-C., Chang, C.-H., & Hsiao, K.-L. (2022). Exploring the factors of using mobile ticketing applications: Perspectives from innovation resistance theory. *Journal of Retailing and Consumer Services*, 67, 102974.
- Cheng, R., Wu, N., Varvello, M., Chen, S., & Han, B. (2022). Are we ready for metaverse? A measurement study of social virtual reality platforms. In *Proceedings of the 22nd ACM Internet Measurement Conference* (pp. 504–518). Association for Computing Machinery.
- Govaerts, F., & Olsen, S. O. (2022). Exploration of seaweed consumption in Norway using the norm activation model: The moderator role of food innovativeness. *Food Quality and Preference*, 99, 104511.
- Gupta, S., Kar, A. K., & Baabdullah, A. M. (2024). Barriers to metaverse adoption: A conceptual framework. *Technological Forecasting and Social Change*, 189, 122336.
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24.
- Hollensen, S., Kotler, P., & Opresnik, M. O. (2023). Metaverse—the new marketing universe. *Journal of Business Strategy*, 44(3), 119–125.
- Hoonsopon, D. (2016). Accelerating adoption of new products of Thai consumers. *Journal of Asia-Pacific Business*, 17(2), 151–172.
- Huang, L. (2025). Drivers of metaverse adoption among children and youths: a UTATU2 perspective.
- Huang, Y., Li, H., & Chen, X. (2021). Consumer resistance to new technologies: A systematic literature review. *Journal of Consumer Behaviour*, 20(4), 897–910.
- Jafar, A., Yousaf, Z., & Zaman, U. (2023). Stimulus-organism-response framework in metaverse marketing. *Journal of Interactive Marketing*, 62, 85–98.
- Kar, A. K., & Varsha, P. S. (2023). Techno-functional building blocks of metaverse ecosystems. *International Journal of Information Management Data Insights*, 3(2), 100176.

- Klein, Z., Shner, G., Ginat-Frolich, R., Vervliet, B., & Shechner, T. (2020). The effects of age and trait anxiety on avoidance learning. *Behaviour Research and Therapy*, 129, 103611.
- Klyton, A., Abdullah, A. M., & Triveni, M. (2021). Drivers of mobile banking resistance. *Journal of Financial Services Marketing*, 26(1), 65–78.
- Laurell, C., Sandstrom, C., Berthold, A., & Larsson, D. (2019). Exploring barriers to VR adoption. *Journal of Business Research*, 100, 469–474.
- Laukkanen, T. (2016). Consumer adoption versus rejection decisions in seemingly similar service innovations: The case of the Internet and mobile banking. *Journal of business research*, 69(7), 2432-2439.
- Leong, L. Y., Hew, T. S., Tan, G. W. H., & Ooi, K. B. (2021). Predicting innovation resistance. *Technological Forecasting and Social Change*, 168, 120785.
- Li, S. (2025). Design of Metaverse digital technology optimization model. *Procedia Computer Science*, 259, 977–983.
- Lindner, P., et al. (2017). Creating next-generation VR exposure therapies. *Cognitive Behaviour Therapy*, 46(5), 404–420.
- LPRLK, K., & Buddika, H. A. M. (2023). Understanding consumer rejection of Facebook advertising. 345.
- Ma, L., & Lee, C. S. (2019). Barriers to MOOCs in developing countries. *Journal of Educational Computing Research*, 57(3), 571–590.
- Mendis, R., Cader, K. A., & Azam, M. (2023). VR in online clothing businesses. *BMS The Journal of Applied Learning*, 1(1).
- Migliore, G., et al. (2022). Consumer resistance to mobile payments. *Journal of Retailing and Consumer Services*, 64, 102845.
- Morgan, K. (1970). Sample size determination using Krejcie & Morgan table. *KENPRO*, 38(1970), 607–610.
- Nie, Q. (2025). Why are people reluctant to use metaverse products? *Online Information Review*.
- Park, S. M., & Kim, Y. G. (2022). A metaverse taxonomy. *IEEE Access*, 10, 4209–4251.

- Prakash, A., & Das, S. (2022). Resistance to digital contact tracing. *Technological Forecasting and Social Change*, 179, 121635.
- Qamar, S., Anwar, Z., & Afzal, M. (2023). Threat analysis for XR systems. *Computers & Security*, 128, 103127.
- Ram, S. (1987). A model of innovation resistance. *Advances in Consumer Research*, 14, 208–212.
- Ram, S., & Sheth, J. N. (1989). Consumer resistance to innovations. *Journal of Consumer Marketing*, 6(2), 5–14.
- Şahin, F., & Söylemez, C. (2022). Hedonic value in wearable tech. *Gaziantep University Journal of Social Sciences*, 21(3), 1244–1269.
- Sheth, J. N., & Stellner, W. H. (1979). Psychology of innovation resistance.
- Shishan, F., Jebran, K., & Chen, S. (2022). Resistance to cryptocurrencies. *Technological Forecasting and Social Change*, 181, 121748.
- Sowmya, G. M., et al. (2023). Solar supergranular lifetime. *Astrophysical Bulletin*, 78(4), 606–612.
- Sowmya, G., Chakraborty, D., Polisetty, A., Khorana, S., & Buhalis, D. (2023). Metaverse and personality traits. *Psychology & Marketing*, 40(10), 2132–2150.
- Stohr, C., Demaziere, C., & Adawi, T. (2020). Online flipped classroom. *Computers and Education*, 147, 103789.
- Stern, J. (2022). Trapped in the metaverse. *Qualified One Blog*.
- Syal, S., & Mathew, R. (2020). Threats in mixed reality. *Procedia Computer Science*, 171, 2720–2728.
- Talke, K., & Heidenreich, S. (2014). Overcoming pro-change bias. *Journal of Product Innovation Management*, 31(5), 894–907.
- Tang, J., & Chen, M. (2022). Consumer resistance to emerging technologies. *Technology in Society*, 68, 101839.
- Tangermann, V. (2022). \$1.2 billion metaverse horrified. *Futurism*.
- Teng, Y. M., Wu, K. S., & Hsu, M. Y. (2022). UTAUT and perceived risk. *Educational Technology Research and Development*, 70(6), 2349–2371.

- Thornhill, M. N. (2016). *Research Methods for Business Students*.
- Transformation, C. T. (2022). Can metaverse benefit developing countries? *World Bank Blog*.
- Verma, P., Sinha, N., & Jain, S. (2023). Consumer resistance to food delivery apps. *Journal of Retailing and Consumer Services*, 71, 103182.
- Wang, Y., Su, X., & Li, X. (2023). Experiential factors in metaverse exhibitions. *Computers in Human Behavior*, 141, 107626.
- Watson, T. (2021). Top 5 virtual reality challenges. *Skywell Software Blog*.
- Yoo, K., Welden, R., Hewett, K., & Haenlein, M. (2023). The merchants of meta. *Journal of Retailing*, 99(2), 173–192.

FROM H2H TO M2M: A MIND-TO-MIND MARKETING PARADIGM FOR SUSTAINABLE CONSUMPTION

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ABSTRACT

Marketing is often criticised for a basic contradiction: it promotes sustainability while also encouraging more consumption. These dual mandates seem to be contradicting with each other, especially in cultures where people buy too much because they feel empty inside, rather than because they really need it. This paper suggests that M2M (Mind-to-Mind) marketing is a step forward from H2H (human-to-human) marketing. H2H emphasises empathy and personal connection, while M2M delves deeper to tackle the consumer's psychological needs offering peace of mind, liberation from competitive consumption, and emotional assurance to consume adequately rather than excessively. M2M uses research on changing consumer behaviour, studies on well-being, and sustainable marketing to say that marketing should do more than mere shape preferences; it should also calm them. The article elaborates on the M2M concept, situates it within contemporary literature, and introduces a model and eligibility mechanisms such as mindfulness-related contributions and AI-driven qualification protocols for luxury consumption that facilitate brand growth without forcing consumers into excessive consumption. As per the UN Sustainable goals, achieving sustainable consumption is already declared as impossible due to the year on year increase in consumption specially in developed countries despite the fact that there are so many people deprived of having their basic needs met. In this backdrop, this paper tries to develop a concept to address the issue with possible solutions to solve the paradox of being stuck in the middle of sustainable vs being caught up in consumption. The idea is to bring forth the importance of

filling the vacuum in the hearts and minds through marketing.

Key words: mindful consumption, peaceful consumption, grateful consumption, sustainable consumption, M2M marketing

1. INTRODUCTION

1.1 Background

For a long time, marketing has been the main way to create demand. In the 21st century, however, it was expected to do two things at once: get people to buy and get them to buy in a way that is good for the environment (Peattie and Peattie, 2009; Kotler, 2011) and it has created a dilemma in the minds of consumers and marketers equally. At the same time, people in many markets are not getting happier by consuming/buying more; instead, they feel anxious, compare themselves to others, and feel like they don't have enough (Jackson, 2005; Kasser, 2002).

1.2 Research Problem

How can marketing be re-engineered to reduce desire-pressure and enable sustainable consumption without eroding brand value or consumer wellbeing and be instrumental in giving peace of mind to consumers while satisfying their physiological needs.

1.3 Purpose

If marketing can make people want something, it should also be able to free them from unhealthy desires. This paper presents M2M (Mind-to-Mind) marketing as a response. The main idea is simple: marketing should not only convince customers, but also help them feel at ease. This conceptual study develops and justifies an M2M (Mind-to-Mind) marketing framework that stabilises desire and cultivates peace of mind, specifies operational mechanisms (Mindful Consumption Score, Verified Contribution Ledger, luxury eligibility tiers), and derives

testable propositions linking marketing stimuli to wellbeing and sustainability outcomes.

a. Significance

H2H marketing celebrates the human aspect of transactions, while M2M marketing goes further by addressing the individual's inner state and promoting psychological safety, non-competitive consumption, and sufficiency. This, in turn, makes it possible to consume in a truly sustainable way.

2. LITERATURE REVIEW

The review synthesises transformative/sustainable marketing, mindful consumption and sufficiency, self-determination theory, durability and circularity, luxury ethics, digital wellbeing, anti-consumption, and conscious capitalism. Digital wellbeing emphasises media hygiene; anti-consumption centres on refusal; conscious capitalism foregrounds firm purpose. A gap persists: a marketing logic that explicitly targets peace-of-mind outcomes while specifying consumer-level reciprocity and eligibility mechanisms. Evidence notes on population-level meditation (e.g., Merseyside time-series analyses) suggest potential public-good spillovers and motivate M2M's focus on inner peace as a market outcome.

2.1 The Sustainability Paradox in Marketing

A significant corpus of literature indicates the conflict between marketing and sustainability. Sustainable marketing seeks to harmonise business objectives with environmental and social aspirations (Belz and Peattie, 2012); however, conventional marketing techniques such as segmentation, positioning, and promotion were originally designed to enhance purchase volume and frequency (Baker, 2014). This results in the sustainability paradox: marketing is criticised for exacerbating overconsumption while concurrently being advocated as a solution (Prothero et al., 2011; McDonagh and Prothero, 2014). Simultaneously, studies in transformative consumer research (Mick, 2006; Mick et al., 2012) and macromarketing (Layton, 2011) contend that marketing systems ought to promote consumer and societal welfare, rather than merely

facilitating transactions. If marketing can influence, prime, frame, and mould behaviour, it can also lead consumers towards sufficiency, minimalism, and psychological well-being. A marketing strategy that directly targets the mind-state the anxieties, social comparison, fear of missing out, and consumption-as-compensation behaviours that create unsustainable demand is often missing. M2M marketing wants to fill that gap.

2.2 A Change in Ideas from H2H to M2M

H2H (Human-to-Human) marketing came about as a way to fix the cold, transactional B2B/B2C labels. It says that every exchange ends with a person. It puts empathy, storytelling, and being real first. This is important, but it isn't enough to make things last. M2M (Mind-to-Mind) marketing adds two important layers: (1) Role of the marketer redefined; a psychological goal to ease tension around consumption, like status anxiety, performative buying, and scarcity mindsets; and (2) Role of the consumer redefined; a peace-of-mind goal consumers should feel safe, secure, and not in a race to buy. H2H asks, "How do I connect with you as a person?" and M2M asks, "How do I help your mind to relax?" That is a promise for marketing that is different in quality. And to promote more mechanisms to fill the vacuum people are trying to fill with consumption or in other words how can they be happy in the absence of desired consumption levels specially when it comes to luxury brands.

2.3 The Main Idea Behind M2M Marketing

People often eat to fill a hole in their minds or hearts. If marketing shows them other ways to fill that void like belonging, meaning, and contribution then the pressure to buy things goes down, and sustainability becomes achievable. This is in line with self-determination theory, which says that people do best when their needs for autonomy, competence, and relatedness are met (Deci and Ryan, 2000). Many brands are trying to meet those needs indirectly by making products. M2M says that you can meet some of those needs directly through your marketing, community, and value proposition. This way, the customer doesn't have to rely on consumption beyond what's actually required to be happy. Never ending desire for continuous buying needs to stop and it should be substituted with mind therapy and good deeds that would make them happy.

2.4 M2M Marketing and Feeling Safe – Feeling Good

A main goal of M2M is to make consumers feel safe and secure without making them compete with each other. This aligns with research on mindful consumption (Sheth, Sethia, and Srinivas, 2011) and voluntary simplicity (Etzioni, 1998). Those streams show that people can feel better when they have less material throughput, as long as social and psychological pressures are lower. M2M makes that happen in real life by:

Don't use "get ahead of others" or "don't miss out" frames that make people want to compete with each other (Richins, 2017).

Framing of sufficiency: "This is enough for you," not "Buy the next one" (Princen, 2005).

Security signalling: letting the customer know about the product's durability, after-sales support, warranties, and brand ethics, so they don't feel like they need to buy it again as insurance.

Identity beyond products: Helping people define who they are by what they value and how they contribute, not by what they own.

2.5 The Obvious Hypocrisy: Marketing, Buying, and Being Green

Critics say that even though a lot of companies use green positioning, their main business models are still focused on growth and volume (Prothero et al., 2011). This is why sustainability campaigns can mean nothing to consumers as consumers are more knowledgeable than the consumers existed 10 years ago. M2M solves this problem by changing the measure of marketing success from volume to health, trust, and sufficiency. It changes marketing from "*stimulus→purchase*" to "*assurance→relationship*", which lets a brand talk about sustainability without sounding like a hypocrite.

2.6 An Idea Framework for M2M Marketing

M2M can be represented as a four-tiered structure:

Mind Insight: Use qualitative research and wellbeing scales to figure out what is wrong with the consumer's mind, such as anxiety, FOMO,

social comparison, or uncertainty and make consumers aware of them instead of keeping them as business secrets to make use of them to increase undue sales.

Peace Proposition: Create value propositions that ease tension by being durable, clear, fairly priced, easy to use, and easy to fix (Geissdoerfer et al., 2017).

Communication that doesn't put pressure on people: Use words that show you care, are enough, and are part of a community. Don't use tactics that make people feel like they don't have enough.

Sustainable Delivery System: Support the promise with take-back programs, long warranties, services based on access, and clear after-sales support (Belz and Peattie, 2012).

Expanding M2M: Mindfulness, Reciprocity, and Eligibility Protocols in High-End Consumption

M2M marketing doesn't say no to products; it changes what is being sold/consumed and how. One promising approach is to make mindfulness, wellbeing, meditation, charity, and gratitude visible "products" experiences and practices that directly address psychological needs (Brown and Ryan, 2003; Emmons and McCullough, 2003). When brands make these kinds of actions more desirable, the effect can be two-way: people who can afford to make discretionary purchases are encouraged to help those in need by making credible, measurable contributions (Varadarajan and Menon, 1988; Lichtenstein, Drumwright and Braig, 2004; Sen and Bhattacharya, 2001). In M2M, marketers should promote mindfulness-related initiatives and make them "*trendable*," which will make behaviours that promote inner peace more common and less conspicuous.

Another way is to set up a qualification system for people who want to buy luxury brands. The idea is not to limit freedom, but to connect luxury with responsibility. Real luxury often lasts longer, can be fixed, and has historical value. These are qualities that can be more sustainable than quick, throwaway options when you look at the whole lifecycle (Joy et al., 2012; Kapferer and Michaut-Denizeau, 2014). To prevent virtue signalling, access to specific luxury tiers

could be contingent upon verified, continuous contributions to social welfare and environmental objectives, similar to the accountability of corporations through CSR and shared value frameworks (Carroll, 1991; Porter and Kramer, 2011).

3. METHODOLOGY/METHODS

A description of research Philosophy/Approach, Strategy, Research Context, Sample selection, Data collection methods

This study employs a conceptual research design grounded in theory development and integrative synthesis. Relevant literature in sustainable marketing, consumer well-being, mindful consumption, and transformative consumer research was systematically reviewed to identify conceptual tensions and underexplored dimensions of consumption-related mind states. Through interpretive analysis and abductive reasoning, recurring themes were abstracted and logically connected to develop the Mind-to-Mind (M2M) marketing framework.

3.1 Research Philosophy/Approach.

Constructivist-pragmatist conceptual synthesis. The study pursues theory development via integrative review and framework building; it does not collect primary behavioural data.

3.2 Strategy.

Structured framework-building in six steps: (1) problem domain identification; (2) sampling adjacent literatures; (3) concept extraction (peace-of-mind constructs and mechanisms); (4) integration logic aligning micro-meso-macro; (5) proposition development; (6) boundary conditions.

3.3 Research Context.

Consumer markets where firms publicly commit to sustainability while competing on growth; categories with durability potential (e.g., fashion, electronics, mobility) and luxury segments.

3.4 Sample Selection.

Purposive sampling of peer-reviewed literature (seminal works and 2000–2025 streams) across sustainable/transformational marketing, mindful consumption/sufficiency, SDT, circularity, luxury ethics, digital wellbeing, anti-consumption, shared value/conscious capitalism; complemented by cause-related marketing and macromarketing sources.

3.5 Data Collection Methods.

Concept-centric literature review using database searches and backward/forward citation tracking; analytic memoing and constant-comparative integration to refine constructs and linkages.

Therefore, a specific mechanism is proposed that is in line with M2M:

Mindful Consumption Score (MCS): A consumer-level index that shows how much someone does mindfulness practices (like taking certified courses, doing community service, making verified donations, and time-banking), how careful they are with their money, and how little pressure they feel to buy things. The goal is to teach and motivate, not punish.

Verified Contribution Ledger (VCL): A record of donations to fight poverty, improve education, and restore the environment that protects privacy and can be checked by accredited third parties. Brands can choose to see it (like transparency logics in sustainable supply chains).

Eligibility Levels for Luxury Access: Luxury brands may only let people into limited editions or concierge services if they meet certain MCS and VCL levels. This makes sure that people who are willing to pay more are also willing to give more.

Warranty of Longevity (WoL): In exchange for eligibility, the brand promises long warranties, repair services, and take-back programs to keep the sustainability benefit of durable luxury (Bocken et al., 2016; Geissdoerfer et al., 2017).

AI-Assisted Fairness and Monitoring: AI systems that have been checked for bias and privacy can help determine who is eligible, flag

greenwashing, and make sure ,that contributions are real-time and extra (see governance concerns in algorithmic decision-making and CSR assurance).

This protocol changes the way we think about luxury by making it a way to responsibly aspire: the more expensive something is, the more verified contribution it makes. Luxury users, who are aware of their responsibilities and who can use the items they buy, become supporters of quality over quantity. In M2M terms, marketers go beyond meeting the needs of the body and soul to meeting the needs of the mind, which means building peace, trust, and long-term relationships.

4. DATA ANALYSIS AND RESULTS

4.1 Framework Figure.

Figure 1 depicts hypothesised causal pathways from marketing stimuli through mechanisms to outcomes (peace of mind, trust/loyalty, lower material throughput, sustainable consumption), including the Mind–Body–Soul mapping that links normative aims to operational levers.

MIND – BODY- SOUL related constructs

Mind insights

Anxiety, comparison and competition, FOMO, pressure to purchase more, Self Esteem and Self identity created through consumption (What you associate vs what you truly are)

Body insights

Making mind feel good through treating the body as it's the only known way of making the mind happy. No alternatives identified and as a result consumption is the only way forward.

Soul insights

Being unaware of so called: good merits and bad deeds, the effect of meditation etc to heal the body and the world. No enough marketing being done to satisfy the soul.

Peace of mind as a proposition

Propogating peace of mind as the ultimate achievement in all forms of consumption. Not the quantity of consumption.

Mindful consumption as a trend

Making giving as a part of consumption and make it a trend to give than get. Be mindful of what's really required to satisfy physical needs (Body) than merely buying in competition.

Qualifying criteria for luxury consumption

Making people realize that the soul can't touch any of the materialistic consumptions but the mind and sould combination can create a new paradigm in consumption and make it more visible as a trend in luxury consumers mind.

Figure 1. M2M framework with mechanisms and construct

Conceptual Results (Outputs).

- P1: Sufficiency-oriented framing (vs activation) reduces perceived pressure to consume and increases peace-of-mind value and trust, holding product utility constant.
- P2: Peace Proposition elements (durability, repairability, fair pricing) reduce 'insurance' repurchase, lowering material throughput over the lifecycle.
- P3: Participation scored via MCS increases eligibility for luxury tiers; eligibility tied to VCL raises verified contributions without increasing rebound consumption.
- P4: VCL transparency elevates brand trust and willingness-to-pay for durable offerings with Warranty of Longevity.
- P5: Population-level meditation hubs correlate with improved community wellbeing metrics, reinforcing M2M outcomes (subject to rigorous causal testing).

5. DISCUSSION OF THE FINDINGS

The M2M framework complements but extends digital wellbeing by redesigning marketing stimuli rather than prescribing media abstinence; it diverges from anti-consumption by aligning calibrated aspiration (durable luxury) with verified contribution; and it moves beyond conscious capitalism's firm-centric lens by specifying consumer-level reciprocity and eligibility. Boundary conditions include category durability, cultural norms (status signals), inequality, and regulatory environments (e.g., right-to-repair). The Mind-Body-Soul mapping clarifies how meaning-laden communication and durable delivery systems jointly stabilise desire by addressing psychological and material sources of pressure. It also promotes certain mind related activities in combination with soul to do good to the society. It further be instrumental in beinging social well-being to the self and to the others by means of promoting good deeds.

The Mind-Body-Soul Sustainable Consumption Model I proposed as a practical framework for M2M marketing to implement authentic sustainable consumption. In this model, sustainable consumption arises at the convergence of three intrinsic human dimensions mind, body, and soul each linked to a specific quality of consumption. Mindful consumption is about being aware of what you really need and what will make you happy in the long run, rather than acting on impulse, copying others, or following an algorithm. Grateful consumption is based on the body and stresses being thankful to everyone in the value chain and the planet itself. It does this by recognising that every act of consumption uses up limited resources and requires human effort, which encourages respect, moderation, and less waste. Peaceful consumption comes from the soul and means buying things without feeling FOMO or competing for status. Instead, it means satisfying real inner needs instead of trying to make a statement to society. M2M marketing goes beyond the traditional H2H model by promoting all three types of consumption at the same time: mindful, grateful, and peaceful. This helps people fill psychological gaps without overconsumption, which connects personal well-being with truly sustainable consumption.

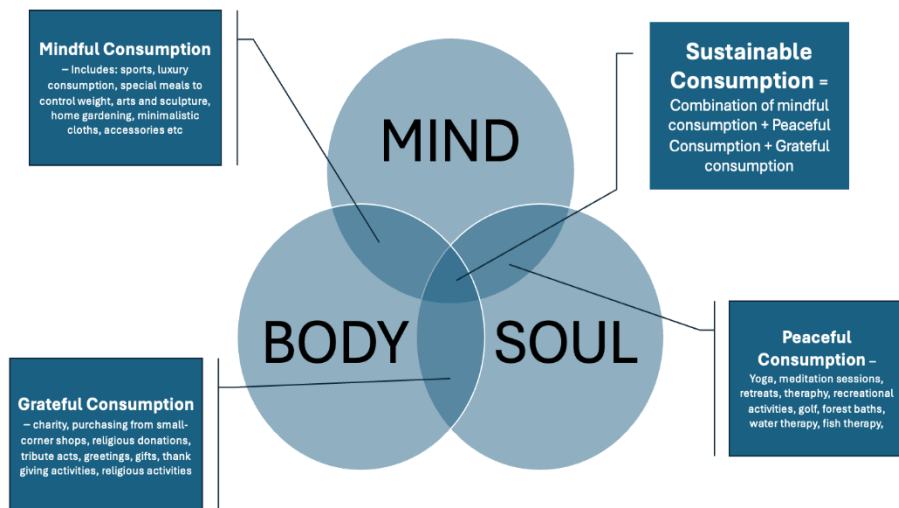


Figure 2: the Mind-Body-Soul Sustainable Consumption Mode

5.1 What this means for practice

Brand Positioning: Place yourself around calm value and responsible desire "We let you know what's new and available" but you can think before buy. We are here to elevate your mind and soul not to treat your bodily needs should be the proposition of luxury brands. Luxury brands should go beyond seductive positioning to improving one's self realization whereby making them a part of a global community of elevated minds not mere physical bodies.

KPIs: Keep an eye on revenue, well-being, and trust. Also, look at MCS uplift, verified contribution volume, and repair/repurchase ratios. Develop profiles of responsible luxury brand users and giving them recognition that they desire by consuming them and reflecting them on their lifestyle.

Product-Service Systems: Repair, refurbish, and take back products to make them last longer; include WoL as part of the peace-of-mind value. Taking care of branded goods and maintaining them should be promoted as a way of elevated lifestyle instead of throwing them to the environment whereby contributing to the increasing pollution.

Content Strategy: Write about how to control your emotions, be smart with your money, and live mindfully. Make giving back trendy and essential to be eligible to consume luxury brands. Affordability shouldn't be the only criterion to be eligible to purchase luxury brands. A true luxury brand should maintain a database of their buyers and elevate them to achieve higher status of mind by bundling their offer with auxiliary services to develop the mind not just the body.

Ecosystem Partnerships: Work with certified NGOs, auditors, and identity providers to make VCL and eligibility tiers work while keeping privacy and fairness in mind.

6. CONCLUSION & CONTRIBUTIONS

This paper reframes marketing from stimulation of purchase to assurance/relationship and sufficiency. Theoretical contributions include defining 'peace utility', specifying micro→macro pathways, and articulating sufficiency-compatible growth logics. Contextually, the model addresses markets where sustainability and growth mandates coexist. Methodologically, the paper advances a

transparent, six-step conceptual integration procedure and produces testable propositions.

M2M marketing changes the way we think about marketing. It stops being a discipline that always makes people want things and instead becomes one that keeps people from wanting things too much, so that they can live well within the limits of the planet. M2M creates room for real sustainable consumption by addressing the consumer's mind its doubts, comparisons, and perceived gaps. Adding mindfulness-based reciprocity and eligibility protocols to M2M in the luxury market changes the goal from accumulation to contribution. This solves the problem of hypocrisy by making peace of mind and stewardship part of the act of consumption.

6.1 Implications to Practitioners

Compete on tranquillity, durability, and stewardship; publish VCL dashboards; implement extended warranties and take-back schemes. Adopt new KPIs (Perceived Pressure Index, Peace Utility, MCS uplift) alongside revenue; monitor repair/repurchase ratios.

Pilot eligibility tiers linking luxury access to verified contributions and mindfulness participation; ensure privacy-preserving governance.

6.2 Limitations

As a conceptual study, findings are theoretical and require empirical validation. Equity, privacy, and gaming risks may arise in eligibility and ledger mechanisms; population-level meditation effects are contested and demand rigorous designs. Generalisability is bounded by category durability, socio-cultural status norms, and regulation.

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REFERENCES

- Baker, M.J. (2014) *Marketing Strategy and Management*. 5th edn. London: Palgrave Macmillan.
- Belz, F.-M. and Peattie, K. (2012). *Sustainability Marketing: A Global Perspective*. 2nd edn. Chichester: Wiley.
- Bocken, N.M.P., de Pauw, I.C., Bakker, C. and van der Grinten, B. (2016) 'Product design and business model strategies for a circular economy', *Journal of Industrial and Production Engineering*, 33(5), pp. 308–320.
- Brown, K.W. and Ryan, R.M. (2003) 'The benefits of being present: Mindfulness and its role in psychological well-being', *Psychological Inquiry*, 14(4), pp. 230–256.
- Carroll, A.B. (1991) 'The pyramid of corporate social responsibility: Toward the moral management of organizational stakeholders', *Business Horizons*, 34(4), pp. 39–48.
- Deci, E.L. and Ryan, R.M. (2000) 'The "what" and "why" of goal pursuits: Human needs and the self-determination of behaviour', *Psychological Inquiry*, 11(4), pp. 227–268.
- Emmons, R.A. and McCullough, M.E. (2003) 'Counting blessings versus burdens: An experimental investigation of gratitude and subjective well-being in daily life', *Journal of Personality and Social Psychology*, 84(2), pp. 377–389.
- Etzioni, A. (1998) 'Voluntary simplicity: Characterization, select psychological implications, and societal consequences', *Journal of Economic Psychology*, 19(5), pp. 619–643.
- Geissdoerfer, M., Savaget, P., Bocken, N.M.P. and Hultink, E.J. (2017) 'The Circular Economy – A new sustainability paradigm?', *Journal of Cleaner Production*, 143, pp. 757–768.
- Jackson, T. (2005) 'Motivating sustainable consumption', *Sustainable Development Research Network*, 29(1), pp. 30–40.

- Joy, A., Sherry Jr., J.F., Venkatesh, A., Wang, J. and Chan, R. (2012) 'Fast Fashion, Sustainability, and the Ethical Appeal of Luxury Brands', *Fashion Theory*, 16(3), pp. 273–295.
- Kapferer, J.-N. and Michaut-Denizeau, A. (2014) 'Is luxury compatible with sustainability? Luxury consumers' viewpoint', *Journal of Brand Management*, 21(1), pp. 1–22.
- Kasser, T. (2002). *The High Price of Materialism*. Cambridge, MA: MIT Press.
- Kotler, P. (2011) 'Reinventing marketing to manage the environmental imperative', *Journal of Marketing*, 75(4), pp. 132–135.
- Layton, R.A. (2011) 'Towards a theory of marketing systems', *European Journal of Marketing*, 45(1/2), pp. 259–276.
- Lichtenstein, D.R., Drumwright, M.E. and Braig, B.M. (2004) 'The effect of corporate social responsibility on customer donations to corporate-supported nonprofits', *Journal of Marketing*, 68(4), pp. 16–32.
- McDonagh, P. and Prothero, A. (2014) 'Sustainability marketing research: Past, present and future', *Journal of Marketing Management*, 30(11–12), pp. 1186–1219.
- Mick, D.G. (2006) 'Meaning and mattering through transformative consumer research', *Advances in Consumer Research*, 33, pp. 1–4.
- Mick, D.G., Pettigrew, S., Pechmann, C. and Ozanne, J.L. (eds.) (2012) *Transformative Consumer Research for Personal and Collective Well-Being*. New York: Routledge.
- Peattie, K. and Peattie, S. (2009) 'Social marketing: A pathway to consumption reduction?', *Journal of Business Research*, 62(2), pp. 260–268.
- Porter, M.E. and Kramer, M.R. (2011) 'Creating shared value', *Harvard Business Review*, 89(1/2), pp. 62–77.

- Princen, T. (2005). *The Logic of Sufficiency*. Cambridge, MA: MIT Press.
- Prothero, A., Dobscha, S., Freund, J., Kilbourne, W.E., Luchs, M.G., Ozanne, L.K. and Thøgersen, J. (2011) 'Sustainable consumption: Opportunities for consumer research and public policy', *Journal of Public Policy & Marketing*, 30(1), pp. 31–38.
- Richins, M.L. (2017) 'Materialism pathways: The processes that create and perpetuate materialism', *Journal of Consumer Psychology*, 27(4), pp. 480–499.
- Sen, S. and Bhattacharya, C.B. (2001) 'Does doing good always lead to doing better? Consumer reactions to corporate social responsibility', *Journal of Marketing Research*, 38(2), pp. 225–243.
- Sheth, J.N., Sethia, N.K. and Srinivas, S. (2011) 'Mindful consumption: A customer-centric approach to sustainability', *Journal of the Academy of Marketing Science*, 39(1), pp. 21–39.
- Varadarajan, P.R. and Menon, A. (1988) 'Cause-related marketing: A coalignment of marketing strategy and corporate philanthropy', *Journal of Marketing*, 52(3), pp. 58–74.

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