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Nayana Jayassri Chandyamal Thanthirige Don. GUIDELINES FOR IMPLEMENTING HUMAN-ROBOT COLLABORATION IN THE PRODUCTION ENVIRONMENT OF THE MANUFACTURING INDUSTRY IN LATVIA

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Abstract

Research relevance: The concept of human-centered automation has the potential for direct physical and cognitive collaboration between humans and robots in a shared workspace. This approach changes the dynamics of existing conventional automation in the working world. The fact that the market and research are pushing consistently in the direction of Human-Robot collaboration (HRC) is also highlighted by the numbers which highlights how the collaborative robot market will reach $2 billion by 2030.

Research goal: To create guidelines for implementing human-robot collaboration in the production environment of the manufacturing industry in Latvia.

Research methods: This thesis will use secondary data analysis, survey questionnaires, and expert interviews as data collection methods. In terms of the data processing methods, transcription, ranking, frequency analysis and graphical analysis will be used.

Main findings: The study will uncover the key factors for implementing human-robot collaboration in the production environment within the context of the Latvian manufacturing industry. Furthermore, the results will reveal the benefits and challenges of uncovered factors while providing guidelines for the successful implantation of HRC in the production environment of the Latvian manufacturing industry.

Keywords: Human-Robot Collaboration; Production process; Manufacturing industry; Automation.

Introduction

The manufacturing industry is transforming to prioritize human-centricity, sustainability, and adaptability, influenced by significant challenges including complex production processes, the requirement for mass personalization of products, labor shortages, and the aging workforce. The numerous instances of technological advancements and improvements in production techniques have led the global manufacturing industry to undergo significant change in recent years within the context of Industry 4.0. and they were waving in the direction of Industry 5.0. The concept of human-centered automation has the potential for direct physical and cognitive collaboration between humans and robots in a shared workspace. Human-robot collaboration changes the dynamics of existing conventional automation in the working world. The fact that the market and research are pushing consistently in the direction of Human-Robot collaboration (HRC) is also highlighted by the numbers which underline how the collaborative robot market will reach $2 billion by 2030. Human-robot collaboration (HRC) drives to increase production flexibility and efficiency while minimizing physical requirements for human operators. Human-robot collaboration combines human and robotic capabilities to produce adaptive production processes that improve productivity and quality. Humans excel in adaptation, flexibility, and problem-solving, while robots offer efficiency, repeatability, and accuracy.

The economic growth of the manufacturing sector generally follows the economic growth of a particular country. In 2020, manufacturing accounted for 12% of the total value-added structure, and, compared to 2019, manufacturing production volumes in 2020 decreased by 0.9%. In turn, in 2021, the manufacturing sector was experiencing rapid growth. In the period from January to July, the sector's production volumes exceeded the level of the corresponding period of the previous year by 8.3%. The investment and development agency of Latvia reveals that 308 M euros worth of projects were accepted for fast-track green channel projects in 2023. The estimated change in GDP between 2024 and 2026 is 3.8% which indicates the growth of production in Latvia. The main manufacturing workplaces are located in the zones of Riga, Vidzeme, Kurzeme, Zegmale, and Latgale, and where capital of Latvia is Riga has the highest number of manufacturing facilities. By 2023, the Cumulative FDI into Latvia was 22.6 billion euros in 2022 which was invested mostly on manufacturing companies to initiate in Latvia. According to the research topicality of HRC in the modern manufacturing industry, this technology applies to the Latvian manufacturing industry which is growing rapidly in different sectors of the manufacturing industry like wood processing, Machinery & Equipment, Vehicles, chemicals, food, and high-tech manufacturing sectors. This research theoretical part is based on an analysis of literature and research articles on the manufacturing industry and production processes, the Latvian manufacturing industry, and Human-robot collaboration technology. The research aims to provide guidelines for implementing human-robot collaboration in the production environment within the Latvian manufacturing industry. For analysis of the manufacturing companies in Latvia, the research questionnaire is prepared to answer the following research questions,

- What are the main tasks in the implementation process?
- What challenges do companies have while implementing?
- Which solutions are appropriate to propose to organizations?

The data collection for the research was conducted through 5 main manufacturing companies which are located in the manufacturing zone in Riga. The expert interviews were conducted with different levels of employees from technicians to top-level management from each company. 200 respondents participated in the survey whose results were processed using statistical tools such as Microsoft Excel & SPSS, descriptive analysis methods like frequency analysis, ranking, and graphical analysis to reveal deep insights with conclusions. The results identify the key factors in implementing the process and how HRC improves the company's production efficiency. According to the results, HRC is recommended to the manufacturing industry to improve production efficiency, employee satisfaction, and company performance. Safety concerns, lack of employee skills, and higher initial costs for robots were the main challenges while implementing HRC into the company, according to the results. However, successful strategies like enhancing safety protocols, employee training programs, and outsourcing technical support minimize the implementation challenges.

Literature Review

The term "factory" originated in Europe around a century before the revolution in the 1600s. According to the (Gasparri & Aitchison, 2019) things were built at a specific location, known as a factory. Following the Industrial Revolution, factories began to be developed quickly. For ages, humans produced food and other necessities like clothing, homes, and weapons by hand or with the help of animal work until the 1st Industrial Revolution, the period of significant technological, economic, and social development that began in the late 18th century. The first industrial revolution began in Britain and extended throughout Europe and North America. The steam engine, mechanized textile manufacturing, and the expansion of the iron and coal industries were among the most important developments. This period is called the era of mechanical production when revolution increased production significantly while also transforming society by urbanizing populations and developing new economic structures such as moving from rural and handicraft agrarian economies to manufacturing economies, aided by advances in technology. The United States and Europe experienced the Second Industrial Revolution. Mass manufacturing and the substitution of chemical and electrical energy for steam were the defining features of this revolution. To meet the increasing demand, several industrial and automated operation technologies have been developed, such as the assembly line with automated functions, which enable productivity increases. The technological breakthrough that set off the Third Industrial Revolution was the development of the Integrated Circuit (microchip). The main characteristic of this revolution that arose in the latter years of the 20th century in many industrialized countries worldwide is the employment of electronics and information technology to accomplish increased automation in production (Acemoglu, 2002).

The first industrial robots were created in 1960 The most famous example is Unimate, created in 1961 by Joseph Engelberger and George Devol. It was put in place within the General Motors facility to handle hot metal components and other operations. Most early industrial robots were manipulators that could be programmed to do basic tasks. In the automotive sector, they were employed for painting, welding, and material handling. Industrial robots became increasingly popular in industries by the 1970s, particularly in automobile manufacturing. The IRB 6, the first commercially produced robot with microprocessor control, was unveiled in 1974 by robotics developer ABB (previously ASEA). In 1978, General Motors and Unimation collaborated to develop the PUMA (Programmable Universal Machine for Assembly) robot, which was another significant advancement that allowed for more manufacturing flexibility and accuracy (Hockstein et al., 2007). In the 1980s the integration of sensors and CNC systems improved the accuracy and autonomy of robots. With firms like FANUC, Kawasaki, and Yaskawa spearheading advancements in assembly line automation, Japan has become a global leader in robotics. Beyond the automobile industry, industrial robots have spread to industries like consumer products, electronics, and food production. In the 1990s, developments in AI and machine vision started to create more intelligent robots that could perform increasingly difficult jobs, like sophisticated assembly and visual quality control. These robots still had limited autonomy, task-specific programming, and primitive AI for simple decision-making rather than real-time learning, and they were largely made for repetitive, high-volume activities (Singh and Sellappan, 2024). The 2010s marked the start of the Fourth Industrial Revolution, or Industry 4.0, which is characterized by a convergence of technologies that make it harder to distinguish between the digital, biological, and physical domains. This revolution is characterized by the emergence of advanced robotics with AI capabilities, cyber-physical systems, and smart manufacturing.Cobots, or collaborative robots, are a significant advancement in modern industrial production since they can perform a variety of tasks like assembly and packing while working safely next to people. Industry 4.0 made the floor for Cobots, which were first introduced in 2012 with Universal Robots' UR5, outfitted with sensors and AI-driven control systems that allow for real-time adaptability and improve safety. Robots can now optimize jobs, anticipate faults, and make data-driven decisions on their thanks to the Industrial Internet of Things (IIoT), AI, and machine learning. While technologies like 3D printing and autonomous mobile robots (AMRs) further increase industrial flexibility and efficiency, advanced interfaces like augmented reality and natural language processing have improved human-machine interaction. Industrial robot installations are applied for several processes in the production environment. Material handling, assembling welding, dispensing, processing, quality control, and cleanroom activities are key tasks that are performed by robots in modern manufacturing companies (Müller and Kraus, 2023). HRC refers to environments in which humans (human operators) and robots come into contact forming a tightly coupled dynamic system to perform a task. To achieve this optimum of mutual adaptation to ensure scenarios that are collaborative effectively and efficiently, especially with the recent technological developments dictated by the fourth industrial revolution, Robots are employed with a specific set of characteristics and are named Collaborative Robots (Cobots) (Baratta et al., 2023). The conventional robot cell is a traditional automation system that lacks a shared task and has a divided safety fence. It serves as the foundation for classifying interaction types to demonstrate the rising demand for security measures (see Fig.1).

Coexistence: According to (Behrens et al., 2015) also known as coaction, varies throughout the literature. People and robots will not share a workplace, engage in a shared task or communication, or coordinate their intentions and actions. Humans may share a workspace, but only while completing distinct activities,

Synchronization: When people and robots are working on the same activity in synchronization, their work zones overlap. Nevertheless, there is a time delay (temporal separation) in the work done in the overlapping area, also known as the collaboration space. Although not intended, physical touch is possible (Bauer et al., 2016).

Cooperation: Humans and robots collaborate in a shared workspace to achieve a common objective. Advanced safety equipment including force sensors, sophisticated machine vision, and sophisticated collision detection sensing is necessary for cooperation (Wang, Zeng, and Geng, 2019)

Collaboration: Working together to complete a challenging task while interacting directly between humans and robots is known as collaboration. When people and robots collaborate, they work on the same task at the same time while intending controlled contact (De Luca and Flacco, 2012)

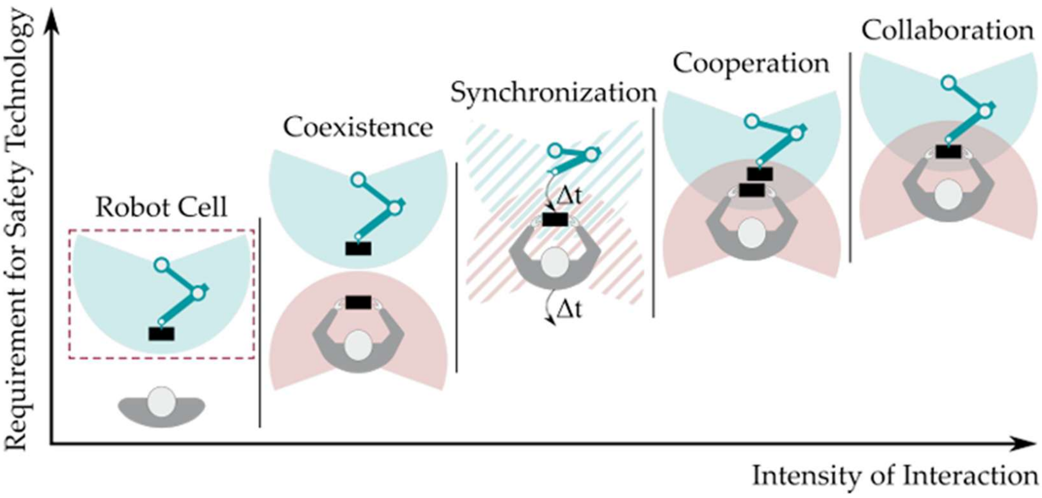

Fig. 1. Types of collaboration in HRC (Bauer et al., 2016)

According to (Cherubini et al., 2013) Physical collaboration involves explicit and intentional contact with force exchange between humans and robots. Non-contact collaboration, in which no physical interaction takes place. Within, the actions are coordinated through information exchange via direct communication (speech, gestures, etc.) or indirect communication (recognition of intentions, gaze, facial expressions, etc.). Particularly, safety considerations are seen as crucial since workers must never sustain injuries. Furthermore, there are difficulties in further structuring workplaces. Individual systems' technological features need to be adapted to the applications for which they are intended. Legal requirements and guidelines also need to be considered (Iso.org, 2023). Employee acceptance of collaborative systems is an essential factor. Production will only use systems approved by workers, eventually boosting output. According to the Fraunhofer Institute's methodology, starting with a questionnaire to evaluate the possibility of human-robot collaboration (HRC) in a particular application.

Based on the features of the application, first, assess the elements that facilitate or hinder HRC. Depending on whether manual labor or automation is more appropriate, this results in suggestions for either additional research or considering an alternative. Future HRC implementation is informed by the findings. In the second stage, thoroughly examine sub-processes to determine HRC compatibility, analyze individual jobs, and collect important data such as previous results and business procedures to efficiently compare workplaces (Gesellschaft, 2024). After a successful examination of pre-implementation time, the following steps would be initiated in order (Othman and Yang, 2023).

Major industrial growth in Latvia started in the nineteenth century, when Latvia was a territory of the Russian Empire, even though the country's first industrial undertakings date back to the sixteenth century in the Duchy of Courland. Russia's massive domestic market determined where industries should be located; Latvia was in an advantageous geographic and transportation position. Railway development helped Latvia's economy flourish in the late 19th and early 20th centuries, positioning it as a major center for the production of textiles, chemicals, and machinery. With two-thirds of the nation's output and a place among the most industrialized cities at that time, Riga became the main industrial hub (Kamols and Ivanova, 2024). A new strategy that prioritizes technical innovation, sustainability, and productivity is set to drive Latvia's manufacturing sector forward. The economic policies of Latvia are set for aiming to become a regional leader in green manufacturing, increase efficiency, and reduce its productivity gap with the EU by implementing cutting-edge technology like digitalization and artificial intelligence. This strategy, which is anticipated to propel export growth and economic advancement by 2035, places a strong emphasis on investments in workforce development and green technology, including bioeconomy and renewable energy (Valainis, 2024). About 300 businesses make up Latvia's electrical engineering and electronics (E&E) sector, which produces cutting-edge technology like nuclear electronics, wireless data equipment, industrial optics, and acoustic systems. Latvia's E&E business exhibits great worldwide competitiveness with a broad range of global markets and an export rate of about 85%. Since 2010, the manufacturing industry in Latvia that produces electronic and optical devices has grown at the quickest rate, rising from 3.7% to 7% of total manufactured volume in 2022 (www.liaa.gov.lv, 2024). See Fig. 2 which indicates the proportions of each subsector of the manufacturing industry in Latvia.

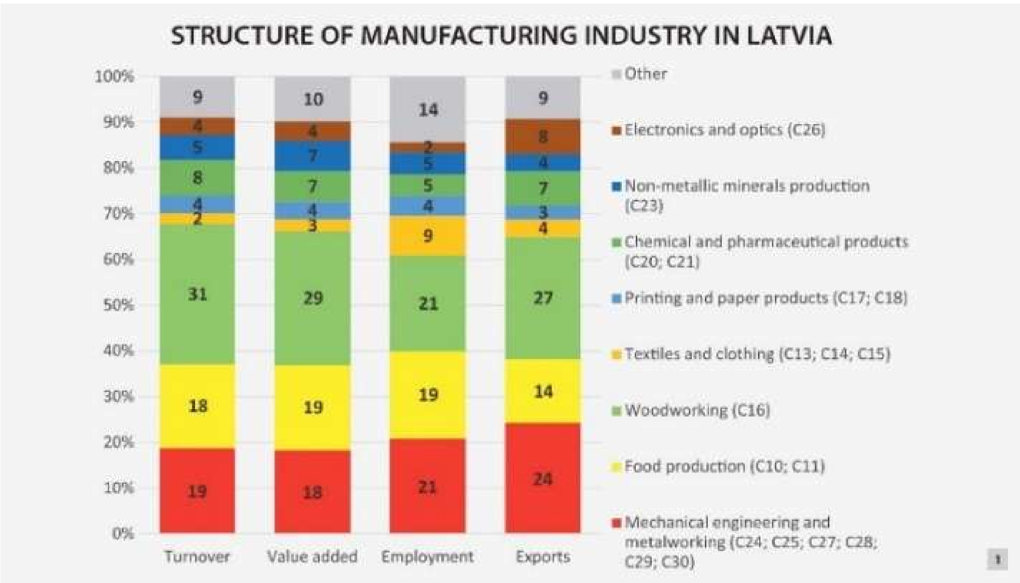

Fig. 2. Structure of Latvian manufacturing industry (www.masoc.lv, 2023)

Methodology

This study employs a mixed-method approach that combines secondary data analysis, surveys, and semi-structured interviews to have conclusive answers for the following research questions,

- What are the main tasks in the implementation process?
- What challenges do companies have while implementing?
- Which solutions are appropriate to propose to organizations?

Three main approaches are used in the data collection process for this research. To build a fundamental understanding of typical implementation tasks, difficulties, and solutions, secondary data analysis first included examining previously published works and case studies. Second, a survey was carried out of 200 respondents to collect quantitative information from Latvian leading manufacturing companies such as, MGI Latvia, Vizulo SIA, EHT Fabric, JSC Dobeles dzirnavnieks, East Metal SIA for identifying current HRC activity's broad patterns and common implementation process difficulties. The questionnaire was conducted using the Google Forms platform. Sixteen closed-ended questions ensured consistency, allowing for effective data analysis. SPSS was used to conduct descriptive and frequency analyses, identifying prevalent challenges and effective solutions. Additionally, binary logistic regression helped assess relationships between demographic variables and strategy effectiveness in implementing human-robot collaboration. For that, the frequency analysis and rankings were performed to quantify the prevalence of each challenge and solution enabling a clear picture of obstacles and actionable recommendations for HRC implementation. The pattern and collaborations were visualized graphically. Finally, semi-structured interviews with professionals in the field yielded qualitative information that allowed for an in-depth investigation of particular problems and possible fixes. The recorded interviews were transcribed to analyze data.

Results

The number of participants was 200 and the following graph shows gender-wise contribution to the survey. The number of male and female respondents was 117 and 43 respectively.

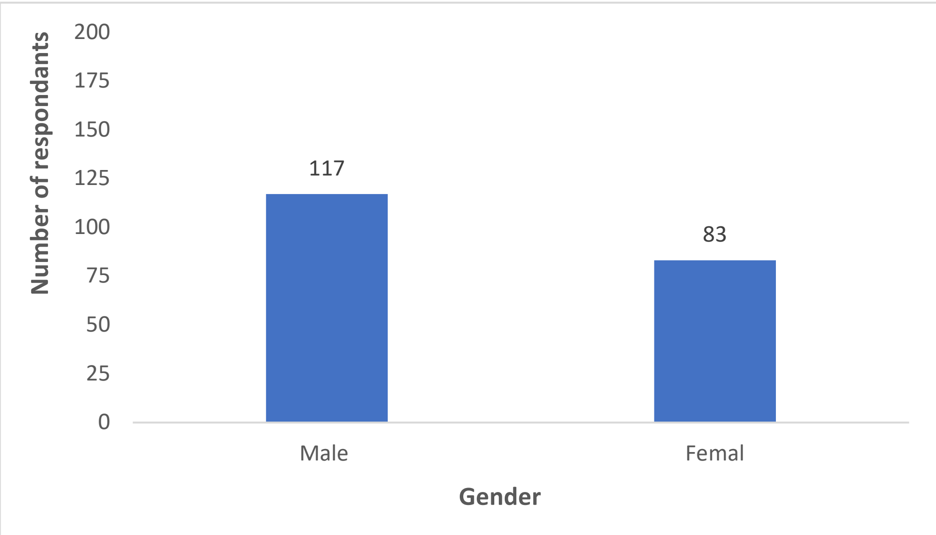

Fig. 3. Sample division by gender (source: created by author)

The results revealed that human-robot collaboration is primarily utilized for material handling and quality control tasks, with moderate involvement in assembly and packaging. Most companies reported challenges in the high cost of implementation, with approximately 70% of respondents identifying this as a significant barrier. 60% of respondents reported employee resistance to automation, and additional concerns were compatibility issues with existing systems. The lack of employee skills necessary for robot operations further impacted successful collaboration, highlighting the need for enhanced training. See below Fig. 4.

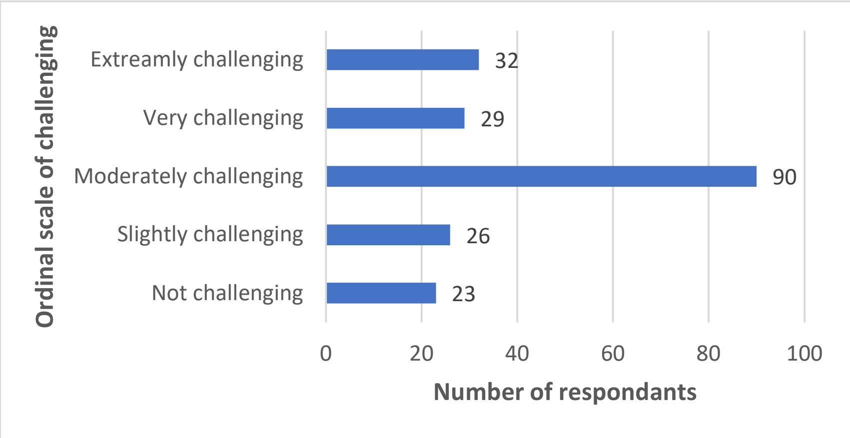

Fig. 4. How HRC implementation is challenging (source: created by author)

Companies implemented various strategies to facilitate smoother collaboration in response to these challenges. Employee training programs and improved communication between departments were the most frequently used strategies, with over 60% of respondents finding these approaches to be highly effective. Enhancing safety protocols and integrating advanced software for better compatibility was moderately effective but less commonly applied. Overall, respondents indicated that human-robot collaboration has positively impacted operational efficiency. Satisfaction with human-robot collaboration implementation was high and around 70% of respondents recommend HRC to the other manufacturing companies as shown in Fig 5.

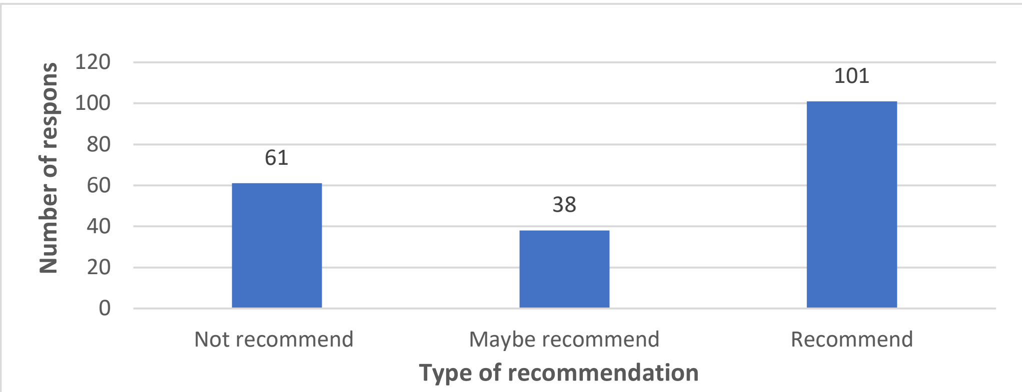

Fig. 5. Recommendation of HRC (source: created by author)

Conclusions

In conclusion, human-robot collaboration in Latvia's manufacturing industry presents substantial opportunities for operational efficiency. The first research question was answered by secondary data analysis. According to the secondary data analysis, the Human-robot collaboration is a rapidly growing industrial application, and the collaborative robot market will rise up to 2 Billion USD by 2030. Due to the competitive market in the manufacturing industry in the world, human labor has to collaborate with robots as a solution for an aging workforce, personalization of products, and to compete with the other companies in the market. HRC implementation processes start with a pre-examination of the specific production workstation to clarify the requirement for HRC or not. After clarification, the HRC proposal, and implementation would be carried out to meet the company's requirements such as safety protocols, target processes, and economic prognosis. The Latvian manufacturing industry is one of the most important economic contributors. The mechanical and metal working and food industries take the lead within the manufacturing subsectors in Latvia. The high-tech manufacturing industry is promisingly growing in the current Latvian manufacturing sector.

The second and third research questions were answered successfully during the survey and expert interviews. The companies face several challenges, particularly in terms of high implementation costs and the adaptability of their workforce. Strategies such as employee training and communication improvements have proven effective in addressing these barriers. To optimize collaboration, companies are encouraged to invest in continuous skill development and foster a workplace culture that embraces innovation. Future research could explore longitudinal outcomes of human-robot collaboration in various sectors, examining specific task impacts to further enhance collaboration effectiveness in the manufacturing industry. The mental health of human laborers within the HRC production workstation should be examined which will support the health and safety of labor.

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Kaushi Pamoda Alwis Lokuliyanage. IMPACT OF ZERO-WASTE STRATEGIES ON THE PROFITABILITY OF THE PROCESSED FOOD INDUSTRY IN SRI LANKA

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Abstract

Research relevance: The processed food industry of Sri Lanka experiences growing pressure to implement sustainable practices because limited resources and environmental concerns become significant issues. A zero-waste implementation strategy produces financial advantages for businesses while resolving environmental issues. Understanding of impact of these strategies on profitability is crucial for industry stakeholders for strategic decision making.

Research goal: To evaluate how the adoption of zero-waste strategies affects the profitability of the processed food sector in Sri Lanka.

Research methods: Data collection combines surveys and questionnaires sent to processed food companies with expert interviews while using literature research on the food industry and its reports. The data processing methods utilize comparative cost analyses together with regression analysis as well as descriptive statistical approaches. Ranking analysis used to identify strategic priorities while transcription analysis serves qualitative insights.

Main findings: The research reveals that how zero-waste approaches create profitability gains through reduced expenses for materials and disposal costs. Improved production procedures together with waste by-product reuse can decrease operational expenses. Sustainable practices result in better brand reputation which boosts both customer loyalty and market share. However organizations must address the challenges of initial investment costs together with employee training requirements when implementing this approach. Adaptation of these initiatives based on national sustainability goals enables the industry to achieve both economical and environmental goals simultaneously.

Keywords: Zero-waste strategies; Profitability; Processed food industry; Sri Lanka; Sustainability.

Introduction

Developing countries like Sri Lanka need to focus on sustainability as it helps them improve their industrial strength and run their operations better. The processed food sector which employs many people and generates much national wealth has rising production expenses and needs better waste disposal systems plus more eco-friendly customer preferences (Weerakoon & Thennakoon 2023). The Ministry of Agriculture (2023) reports that Sri Lanka loses 19% of its vegetables and 21% of its fruits each year due to poor handling and transportation methods during harvest. The waste leads to decreased food supply for national food security programs and creates major financial problems for food processing businesses.

Countries across the world now focus on creating circular systems and zero-waste models that require changes to standard production systems. The methods focus on improving industrial systems while using leftover materials and eco-friendly packaging to lower environmental effects while saving money (Reike, Vermeulen, & Witjes, 2018). Researchers have not yet studied how zero-waste practices affect money-making in Sri Lanka's processed food industry. This research analyzes how zero-waste approaches impact business success in emerging economies to support knowledge growth about sustainable industry evolution.

The study analyzes zero-waste approaches and their effects on profitability from the Sri Lankan processed food sector. Our main goal is to determine what happens to business earnings when companies use waste reduction techniques. To achieve this, the study is structured around six key objectives: to examine core zero-waste methods such as by-product utilization and sustainable packaging; to analyze financial impacts using cost data and performance metrics; to identify cost drivers and challenges through expert insights and survey data; to assess current food waste management practices; to understand barriers and opportunities in implementing zero-waste strategies; and to develop actionable recommendations to enhance profitability through sustainable waste management.

The research depends on three essential research hypothesis. H1 shows Zero-waste strategies have a positive impact on reducing operational costs in the processed food industry in Sri Lanka, but H2 shows Implementing zero-waste strategies has a positive impact on revenue by enhancing brand image and market competitiveness. while H3 confirms Zero-waste strategies have a positive impact on operational efficiency by optimizing resource utilization and reducing production losses.

The research uses both survey data and professional interviews from five top food processing companies including Keells, Cargills, CBL, Nestlé Lanka, and Prima. The study uses secondary data from company publications and official documents to complete its research. Use of different statistical and thematic methods were conducted to understand the research findings. This research brings new insights about zero-waste results in local businesses and suggests a framework that other developing nations can use to develop sustainability solutions.

Literature Review

Food waste today threatens our planet and our society through its economic, environmental, and social problems worldwide. Every year Europe throws away 1.3 billion tons of food which amounts to 30% of total production says the European Commission in 2023. These cooking activities increase worldwide greenhouse gases by 8% which adds to climate problems. The United Nations created Sustainable Development Goal 12.3 to help nations reduce food waste by half per person and lower supply chain losses across the world by 2030. Businesses employ zero-waste processes to boost profitability alongside sustainable practices since wasting food directly reduces available resources. These action plans put a priority on keeping waste away from the system and finding ways to use it again through multiple processes (Bennett 2023).

Food waste poses a significant problem in Sri Lankan society. According to the Ministry of Agriculture (2023) Sri Lanka throws away 19% of its vegetables and 21% of its fruits every year because of transportation and handling problems. Each year Sri Lanka loses 40% of its harvested products which is equivalent to 500,000 metric tons of food and could feed 10 million people. The processed food industry which generates 5% of national Gross Domestic Product and supports multiple small and medium enterprises experiences major performance issues. The combination of wasted production materials and growing energy expenses decreases company profits and raises oversight from both local authorities and worldwide customers.

International research shows that zero-waste methodologies produce double benefits through improved environmental results while making money. A report by Clowes et al. demonstrates that hotel waste reduction methods annually generate seven times their investment back with most hotels recouping expenses in twelve months. According to Bizzozero (2022) 55% of customers now choose products that display sustainability credentials because businesses with these practices gain market advantage globally. Companies that move to zero waste practices achieve better supply tracking and better operations as they waste less materials and dispose less waste.

This study links its findings with established theories used in the food processing field. Basic waste management principles including life cycle thinking and lean production help us understand industrial processes. Zero Waste International Alliance facilitates waste removal from systems to protect nature and human health according to its standards published in 2018. CE principles help us save money through better material management and production optimization according to Jeswani et al. (2021). LCA tools help businesses locate production phases that waste reduction can optimize output. Lean manufacturing which Toyota initially created helps food companies eliminate their production problems that create waste according to Dora et al. (2021). Organizations track financial results through their ability to lower costs and expand profits. Companies achieve lower production expenses by using less raw materials and energy plus paying less to dispose of waste. By taking waste to site for recycling and turning waste materials into new products the company reduced their expenses related to transportation and waste disposal.

Research from Champions 12.3 (Hanson & Mitchell, 2017) shows food companies following zero-waste approaches bring back 14 dollars in profit for every 1 dollar invested. Sustainability practices let companies gain more eco-minded consumers and tap into high-end market opportunities. Market advantages that are hard to measure produce lasting benefits for business success. Food processors in Sri Lanka should follow the successful waste diversion practices of global leaders Nestlé and Unilever. Nestlé Lanka's Kurunegala manufacturing facility turns all its organic waste into compost and recycles other waste materials to reach zero landfill status (Nestlé Lanka, 2021). Unilever Indonesia transformed its factory waste into soap and tire polish during two years which resulted in saving USD 500,000 (Unilever Indonesia, 2020). Becoming better at waste disposal brings combined benefits to business success and environmental protection.

Small and medium-sized enterprises in Sri Lanka face significant obstacles when trying to implement these strategies. Many organizations cannot start zero-waste strategies because they must pay too much at first and lack essential systems plus technical skills. Despite launching environmental policies the government struggles to enforce them effectively and there are minimal reliable data records about waste reduction and business savings (Ministry of Environment, 2019). This research fills the existing gaps by examining how zero-waste methods enhance profitability in Sri Lanka's food industry. Using both worldwide studies and local data this research gathers financial records with interview results and reviews actual examples. Through examining three core hypotheses (H1, H2, and H3) the research provides useful business recommendations and sustainability improvement strategies.

Methodology

This study mixes research methods to explore how zero-waste methods help the processed food industry in Sri Lanka make more money. The research design integrates both numerical performance data and thorough insights about business strategies by using different research methods. Our research method fills knowledge gaps more effectively in developing countries since their business settings vary from high-income nations.

Two data collection methods included pre-defined questionnaires and informal interview discussions. Our surveys gathered responses from staff and middle-level management representatives at Keells Food Products PLC, Cargills (Ceylon) PLC, CBL Group, Nestlé Lanka PLC, and Prima Ceylon (Private) Limited. The research explored essential subjects about reducing waste while investigating economic benefits and work streamlining difficulties. The research used different types of rating scales plus multiple choice and ranking elements to obtain the necessary information. Senior executives from these companies participated in our interviews which covered strategy formation, funds usage and business achievements. Each interview session ran between 30 and 45 minutes as we asked questions supporting our three key research topics which covered cost savings and operational improvement.

The research added secondary data to support its key results. Our data sources consisted of company documents from the past five years which covered environmental reports plus financial statements. The Central Environmental Authority along with Export Development Board and Ministry of Agriculture supplied data on national waste management laws and industry performance numbers. These documents showed us how companies approached waste reduction and what the government and industry did to support it.

The research includes multiple data analysis procedures. The study compared business expenses between pre-zero-waste and post-zero-waste operations. Our research checked if sustainability measures relate to business profit performance. The study presented survey outcomes through descriptive statistics and determined important advantages and difficulties based on rankings. Interview was recorded and applied thematic coding to find common professional beliefs and opinions from each respondents.

Our approach combined statistical results with local business insights to produce findings that fit Sri Lanka's industrial sector and support worldwide research on sustainable business in developing nations.

Results

This section shows research results using mixed methods to study how zero-waste techniques affect processed food industry profitability in Sri Lanka. The data reveals the outcomes for three primary research objectives H1, H2, and H3.

Cost Reduction through Zero-Waste Practices (H1)

Company reports indicate significant cost reductions through waste reduction and resource optimization programs. Nestlé Lanka PLC lowered its landfill waste by 25% from 2019 to 2022 through composting and recycling which saved the company LKR 18 million. Keells Food Products PLC decreased its waste management expenses by 15% through better waste handling at their facilities and by hiring certified waste collection services. CBL Group improved its raw material processing to get 8% more output which saved LKR 22 million every year. Hence the company accomplished both energy and utility cost reductions. By using advanced refrigeration technology Cargills (Ceylon) PLC cut its energy expenses by 10% for each product unit they made while Prima Ceylon saved 5% less water per ton through water recycling systems.

Table 1. Summary of Cost Savings through Zero-Waste Strategies (Created by the author)

Company	Initiative	Cost Savings Achieved
Nestlé Lanka PLC	Waste reduction programs	LKR 18 million (3 years)
Keells Food Products PLC	Enhanced waste management	15% cost reduction
CBL Group	Raw material optimization	LKR 22 million annually
Cargills (Ceylon) PLC	Energy-efficient refrigeration	10% energy cost reduction
Prima Ceylon	Water reuse systems	5% water usage reduction

Survey results confirm these findings. From 390 respondents, the mean score for cost reduction in energy usage was 4.25, raw material costs was 4.14, and waste management was 4.13 (all on a 5-point Likert scale), indicating a strong perception of savings across the sector.

Table 2. Regression Results Interpretation (Created by the author)

Variable	Coefficient	P-Value	Interpretation
Production Efficiency	-0.087	0.308	Not statistically significant; production improvements alone are insufficient for cost reduction.
Inventory Management	-0.568	0.001	Significant negative impact; stronger inventory systems lower operational costs.
Supply Chain Coordination	0.504	<0.001	Significant positive impact; better supply chain practices enhance cost efficiency.
Product Quality Control	0.416	0.002	Significant positive impact; quality control supports cost reductions.

The regression results show inventory management produces the largest impact on cost reduction (β = -0.568 and p = 0.001) since better stock control effectively lowers waste expenses. Supply chain coordination shows its importance through the results (β = -0.493, p = 0.001) because better logistics operations decrease product loss and handling expenses. Product quality control measures with their (β = -0.478, p = 0.002) statistical significance show reductions in raw material and energy usage by decreasing product defects. Consequently these internal zero-waste programs create clear financial improvements in business operations.

Revenue and Brand Competitiveness (H2)

Table 2 shows several companies initiated zero-waste practices to create new income streams. CBL Group produced snack bars from leftover cereal through its "Green Line" brand and Cargills converted used cooking oil into biodiesel which led to an 8% revenue increase in exports during one year. Nestlé Lanka started using biodegradable packages for Milo drinks to make their brand more attractive and reach eco-friendly buyers across markets. Keells Food Products added eco-friendly labels to their packaging which helped the company secure better display locations at urban supermarkets.

Table 2. Revenue Impacts from Zero-Waste Initiatives (Created by the author)

Company	Initiative	Revenue Outcome
CBL Group	Upcycled snack bars	Significant new revenue
Nestlé Lanka PLC	Paper straws for Milo	Improved brand and market access
Keells Food Products	Eco-labeled meat trays	Premium pricing in supermarkets
Cargills (Ceylon) PLC	Biodiesel from used oil	8% export revenue growth

The survey results show strong evidence for Hypothesis 2 because zero-waste methods increase both financial performance and brand market positioning.. Respondents from the processed food sector consistently reported positive perceptions of market-related benefits. Specifically, the mean scores for brand image (4.21), customer satisfaction (4.15), and competitive positioning (4.18) demonstrate a shared belief that sustainable practices improve business appeal. The majority of respondents identified environmentally conscious consumers as being attracted to brands that exhibit visible eco-friendly commitments such as recyclable packaging and waste reduction initiatives. Moreover, companies reported gaining access to new retail channels and export markets by showcasing sustainability credentials. Correlation analysis revealed a strong positive relationship between brand image improvements and revenue growth (r = 0.84), indicating that zero-waste initiatives not only reinforce brand value but also translate into financial returns. These findings suggest that investment in sustainability fosters customer loyalty, strengthens stakeholder trust, and enables firms to achieve pricing advantages and market expansion opportunities.

Operational Efficiency Improvements (H3)

Companies that adopted zero-waste methods achieved better operational results in their business operations. Nestlé Lanka and CBL Group lowered their waste handling steps by implementing composting and better trimming methods. Cargills and Prima Ceylon achieved better water and energy usage while CBL Group automated its stock control which decreased excess production waste by 30%. Cargills enhanced its demand predictions which reduced product waste by 9%.

Table 3. Operational Efficiency Gains (Created by the author)

Company	Initiative	Efficiency Improvement
Nestlé Lanka PLC	Waste reduction programs	25% landfill volume reduction
Keells Food Products	Material yield optimization	8% raw material yield increase
Cargills (Ceylon) PLC	Energy-efficient refrigeration	10% energy cost reduction per unit
Prima Ceylon	Water reuse systems	5% decrease in water use per tonne
CBL Group	Digital inventory management	30% waste reduction

Moreover survey results show consistent improvements. Supply chain coordination scored highest (mean = 4.23), followed by resource use (4.22), production efficiency (4.22), inventory management (4.19), and product quality (4.17). These scores confirm the strong operational benefits of sustainability strategies.

Implementation Challenges

A majority of 96% of respondents identified high initial costs as their main obstacle to zero-waste practices. Lack of technical expertise (81%) and employee resistance (80%) were also significant. Regulatory issues were rarely cited, indicating a supportive policy environment but gaps in skills and funding.

Fig.1. Main Challenges in Zero-Waste Implementation (Created by the author)

The participants strongly recommended technical programs (96%), monetary assistance (89%) and governmental backing (76%) to meet these requirements. At this phase networking received lower priority than other needs. A large majority or 92% of respondents expect their businesses to strengthen zero-waste initiatives during the following two years. The upcoming business targets include making use of waste materials while building staff engagement programs and digital waste tracking systems. Feedback confirmed the initial findings which showed that businesses achieve highest value from reducing costs and running operations better while also meeting standards while making their brand look better and keeping employees engaged.

Insights from Expert Interviews

Professionals from five leading companies confirmed and expanded upon the survey findings. They reported strong cost savings from resource reuse and energy shifts (e.g., Nestlé's 22% fossil fuel reduction), new product revenue (e.g., Keells' 9% sales growth in "Eco Fresh" line), and operational precision through lean systems and digital tools (e.g., Prima's AI-assisted milling).

Every interviewee reported facing two main obstacles which included expensive packaging solutions and minimal locally available packaging alternatives. The companies planned to spend money on edible packaging technologies as well as blockchain tracking solutions and circular supply chain systems in their upcoming initiatives.

Table 4. Interview Summary by Theme (Created by the author)

Company	Cost Savings (H1)	Revenue Impact (H2)	Operational Gains (H3)
Keells	12–15% waste reduction	9% sales growth	6% throughput increase
Cargills	18% spoilage cut	15% brand trust growth	11% less damage, better logistics
CBL Group	LKR 75M in savings	6% repeat sales growth	8% efficiency improvement
Nestlé	22% fossil fuel saved	CSR gains, new B2B deals	18% downtime reduction
Prima Ceylon	14% total savings	12% export growth	4% milling yield improvement

These interviews strengthened the study's credibility and offered practical examples of how large companies in Sri Lanka are successfully implementing and scaling zero-waste strategies.

Conclusion

The findings from this study confirm the view that the implementation of zero waste strategies results in the increments in profit in Sri Lanka's processed food industry. Survey respondents responded that after implementing zero-waste strategies, 82% of the participants reported significant reductions in raw material, energy, and waste disposal costs with Likert mean scores above 4.0. Results of regression demonstrated that inventory management, supply chain coordination, and product quality control were effective in reducing costs. Main findings showed that Nestlé Lanka and CBL Group generated annual savings between LKR 12 million to LKR 26 million. As per H2, firms like Keells and Nestlé generated revenue growth of 3% to 7%, supported by eco-labeling and new upcycled products. There was a strong correlation ($r = 0.84$–0.86) showing close relationships among brand image, satisfaction among customers, and income generation for the companies involved. Products with official certifications according to interviewees enjoyed price premiums ranging between 5% and 12% and accessed international export markets. Lean manufacturing and digital waste tracking in H3 caused 1.5%–3% efficiency increases as demonstrated by scores exceeding 4.17 on surveys and expert observations – reduction in changeover times up to 25%. These conclusions confirm the financial and operational advantages of zero-waste systems.

However, the study has limitations. The sample consists of five leading firms that might not represent the SME sector as a whole. The study faced challenges in disclosing financials because of adhering to confidentiality protocols. Constant investigation is required to understand the full extent of long-term implications arising from conclusions drawn from the study.

Further research should focus on small and medium enterprises in different regions with a special focus on extended time frames. More research is necessary to establish the effects of particular policy incentives and technological developments on the uptake of zero-waste initiatives. The ongoing research and development efforts will make a contribution to the implementation of national sustainability goals and waste reduction in Sri Lanka's food industry.

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Akhil Swaminadhan. ASSESSMENT OF CONSUMER PERCEPTION AND PURCHASE INTENTION TOWARDS GREEN PRODUCTS IN TEXTILE INDUSTRIES IN INDIA

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Abstract

Research relevance: The relevance of this research is that Earth is experiencing greater environmental problems than ever before today; consequently, it is the moral obligation of companies to create eco-friendly goods and present themselves as such. Globalization and fierce rivalry among the companies are likely to cause the rising carbon emissions from industrial facilities throughout the globe to accelerate. Considering good economic climate and low inflation, India's consumer confidence remains the highest worldwide and has increased in the second quarter of calendar year 2024 (Q2). Nielsen's results show that from that in the previous quarter, the consumer confidence in urban India rose one point in the second quarter of 2024. In the second quarter of 2024, Urban India's consumer confidence is 131, three points over 128 in the similar time from past years.

Research goal: To assess the consumer perception and purchase intention towards green products in the textile industry in India.

Research methods: In this study, the research methods have been divided to data collection and data processing methods. The data collections are analyzing a literature review and survey analysis. These analysis have been conducted to analytically review the green sustainable practices and consumer purchase intention. Moreover, different statistical methods have been used in this study and those are descriptive data analysis, frequency analysis of survey participants and factor analysis in order to identify impact factors of green sustainable practices on consumer purchase intention of Indian textile industries.

Main findings: The belief that green textile companies are more ethical influences both availability-related and price-related factors somewhat. This implies that ethical branding might be a strategic difference for businesses in the green textile sector and shapes customer sentiments in two separate ways. Companies that stress their ethical policies might boost customer confidence and inspire more buying intention.

Keywords: Consumer perception; Consumer purchase intention; Indian textile companies; Environmental responsibilities.

Introduction

Considering good economic climate and low inflation, India's consumer confidence remains the highest worldwide and has increased in the second quarter of calendar year 2024 (Q2). Nielsen's results show that from that in the previous quarter, the consumer confidence in urban India rose one point in the second quarter of 2024. In the second quarter of 2024, Urban India's consumer confidence is 131, three points over 128 in the similar time from past years. Following India's present score, which keeps it on top of the global consumer confidence index for the quarter, are the Philippines (122) and Indonesia (120). For the seven straight quarters, Indian confidence has grown.

The relevance of this research is that Earth is experiencing greater environmental problems than ever before today; consequently, it is the moral obligation of the companies to create eco-friendly goods and present themselves as such. Globalization and fierce rivalry among the companies are likely to cause the rising carbon emissions from the industrial facilities throughout the globe to accelerate. Different governments of different nations construct different regulations in order to lower carbon emissions and carbon responsibility has gained popularity on international level. Government has also created environmental legislation meant to safeguard the surroundings. Organizations not just in India but also worldwide today give carbon responsibility great thought. Many Indian companies have so taken this seriously and began their efforts toward environmental preservation.

The aim of the study is to assess the consumer perception and purchase intention towards green products in the textile industry in India.

Globally, companies see India as one of the main countries from where future expansion is probably to start. A good demographic mix and rising disposable incomes will be mostly responsible for India's consumer market development. According to a McKinsey Global Institute (MGI) analysis, average family earnings would treble over the next two decades if India keeps growing at the present rate, therefore ranking the nation as the fifth most consumer economy in the world by 2025, up from its current 12th place.

India is unquestionably a sizable market on the globe. Measuring India's GDP as USD $ 2049.5 billion in 2014, a report by Boston Consulting Group (BCG) and the Confederation of Indian Industry (CII) shows that India's strong economic growth and rising household incomes will boost consumer spending to US$ 3.6 trillion by 2020. Food, housing, consumer durables, transportation and communication are probably where the largest consumer spending will take place. The research also said that by 2020 India's proportion of world consumption will rise more than double to 5.8 percent.

According to India's National Action Plan on Climate Change (Government of India, 2023), the earth's climate system is clearly warming in contrast to the 1850 time span. Carbon dioxide content in the atmosphere reportedly rose from 280 ppm to 379 ppm in 2005. Comparatively, to 1980–1999, the rise in temperature in 2090–2099 is projected to lie between 1.1 degree Celsius and 6.4 degree Celsius. This might be among the primary causes of the effects of climate change on fresh water availability, ocean acidification, food production, coastal flooding, and rise in water-related illnesses connected with the severe occurrences.

The Industrial Revolution brought about a great surge in the expansion of sectors, which raised the concentration of greenhouse gases in the atmosphere. The rising temperature brought about by the higher concentration of greenhouse gases in the atmosphere has a major detrimental effect on the natural surroundings.

India is also seeing significant population increase at the same time, which will strain our natural resources and aggravate the state of climate change. Changing the temperature will negatively affect human health. Rising temperatures will cause disease; death rate may also increase. Under these circumstances, food and water supplies will become sources of worry.

Literature review

Lee et al., 2016 examined Spanish companies to see if they really committed themselves to environmental conservation and whether green marketing should be seen only as an activity or a philosophy. They also investigated if the authentic environmental company really exists or whether the ecoloables are only a vehicle for pitching sales to the customers. Research revealed that the companies really use ecolobeling and have strong environmental principles and dedication. By means of ecolabeling to support the green goods, this encourages the customers to believe the green messages sent to them by the companies and develop a strong green goodwill for the companies.

Jaiswal et al., 2021 looked at Egyptian customers in order to find out how psychological elements and cultural values affected their green buying behavior. The study included a sample of 1093 customers and tested a conceptual model. The conceptual model under examination proved to be valid with appropriate justification. The validity of the model was verified using a structural equation model; it was discovered that customers' sentiments toward green buying influenced by their attitude toward the surroundings, information acquired by customers and the care shown by them toward the preservation of the surroundings. The attitude of consumers about purchasing of green items was discovered to have the association with their real green buy behavior wherein the desire to acquire the green product served as the mediator towards green purchase behavior. Furthermore, suggested was the poor association between the desire to buy a green product and the actual green buying behavior. Concerned about the environmental issues, Egyptian customers were found to have a propensity to buy the green items.

A research on green behavior of Mexican people revealed a notable discrepancy between the government initiatives aimed at environmental conservation and the involvement of the people (Obadă et al., 2024). This result was recorded despite many environmental management projects and efforts. It was advised to inform and enlighten the customers to increase their curiosity on environmental problems and create values among them towards preservation of surroundings.

The green consumer profile of Lithuanina market of environmentally friendly food goods was researched by Sandeepani and Samaraweera (2021). More educated customers were seen to be more sensitive to environmental problems and worried about them. Those who are more worried about environmental problems were also seen to spend extra for eco-friendly items. Apart from the monthly income, the buyers of environmentally friendly food goods had comparable demographic characteristics.

Gong et al. (2022) investigated the young Hong Kong customers to find their green buying patterns and found three main elements that are thought to be absolutely important for the success of green marketing. These were titled "influence from peers," consumer participation in local environmental events," and "understanding of environmental concerns." It was advised to the marketers to leverage interpersonal contact and word-of-mouth publicity in motivating people to propose green goods and to urge the customers to buy together to maximize the peer influence.

Tan and Quang (2023) examined the green market certificate resulting from the lack of natural resources in a case study of Romania. One suggested that energy consumption of the along with the rising oil consumption projected to reach 115 million barrels in 2020, industrialized nations will rise by almost 60% by 2030. It has become essential to change our focus to non-conventional sources of energy as the distribution of oil and gas reserves is not global and increasing energy demand calls for other orientations. Furthermore, recommended was government of nations supporting the growth of green energy by means of incentives to the producers of such energy. Apart from the use of limited resources, countries should concentrate on raising the utilization of renewable resources for environmental sustainability. According to reports, incentives in terms of green subsidy help the energy producers to employ non-conventional energy sources. Oneaven of green subsidy was identified as "Green Certificate." Based on the volume of renewable energy generated or supplied into the grid, energy producers may get green certificates and benefit from them. Given the European Union's aim of attaining 20% consumption of green energy out of the total energy consumption, it was argued that Romania should strengthen its green endeavours towards green energy production by using renewable resources.

Research on the eco-friendly behaviour patterns of Hispanics in California revealed that they engage in recycling, purchase of green products, limiting the usage of natural resources towards the protection of rare resources, and support the green initiatives and causes (Wang et al., 2020). However, Hispanic involvement was confined to a few green events close to their house that call for less personal investment in terms of time and money. Regarding the purchasing of the green goods and services, there also was a discrepancy found between the general public and the Hispanics.

Research conducted by Kerber et al. (2024) in Malang, East Java, for a real estate company with the intention of describing the green marketing application of the real estate company on the basis of green marketing grid and the green marketing matrix; and to analyse the competitive advantage by the implementation of the green strategy found that eco- branding is helpful in creating the competitive advantage for the company. Furthermore, discovered was the company's green marketing grid, which is the green strategy it uses, including a pointing technique for setting an example. According to reports, compared to its commercial area, the initiatives toward environmental preservation have been carried out in the percentage of green areas totalling around 60% area. Given the Using 60% of its spaces as green, the corporation emphasizes environmental issues and helps to establish an example and acquire a competitive advantage.

Studies on the conscious consumption of Brazilian consumers in connection to their use of plastic bags found that most respondents gave great relevance to the use of plastic bags (Wang et al., 2020).

Out of the one billion plastic bags the supermarkets provide each month, 80% of them are used by customers to dispose of trash, left-overs, and empty packets. Brazil manufactured 18 billion plastic bags in 2007; their breakdown takes around 500 years. But it was also noted that the lack of substitute choices against the plastic bags constituted the most withstanding factor for Brazilian consumers' great use of plastic bags.

Protection of the environment is being undertaken both at the government and business levels. For environmental protection, the India Environment Protection Act of 1986 was followed and the Environment Audit of 1992. One of the most polluting cities before Supreme Court of India intervened to switch to alternate energy was New Delhi, Indian capital (Laheri et al., 2024).

In order to reduce pollution, the Supreme Court decided in 2002 to fully embrace CNG in all public transportation systems (Russo et al., 2019) said that small and medium size businesses are expanding quickly due to India's fast industrialization, which has a negative effect on the environment greatly. Small businesses are also least worried about the damage of the environment. The same is explained as the non-installation of pollution control equipment resulting from their great purchase and installation expense. To reduce the emission by small and medium sector businesses, Indian government has, however, actively supported their growth.

One of the areas of focus in green consumer behaviour is post-buying behaviour regarding the disposal of used products. Nokia started its phone recycle program as one of the green initiatives for disposal of electronic equipment and recycling the same towards environmental conservation. Second used vehicle industry in India is also regarded as very large as said before. Seeing this as a chance, Maruti was the first vehicle manufacturer to join the second used automobile industry under True Value's brand. Maruti buys the used automobiles from the consumers, fixes them to ensure they are in excellent working condition and markets these vehicles to buyers seeking a good bargain in the second-hand vehicle market. Other automakers also used the same concept later on.

Japanese electric company Matsushita Electric Industrial Co Ltd looked at introducing its Panasonic Brand environment friendly consumer durable products (including refrigerators and washing machines) line to India (Kolović et al., 2023). They were staring at their release of environmentally friendly consumer products meant to let users save labour expenses and energy consumption Already available in Japan, US, and Europe, they were intending to provide environmentally friendly washing machines using less electricity.

Project Big Green (Hudayah et al., 2023) IBM started in 2007 to assist customers worldwide in better optimizing their data centre resources and increasing IT efficiency. IBM offers software and services solutions that let companies' lower data centre energy usage and more than 40 percent savings in energy expenditures. The initiative aims to make data centres all over more environmentally friendly, reasonably priced, and energy-efficient generally. Under this strategy, IBM would employ the most recent hardware, software, and tools to boost the twofold capacity of its data centres from the current level without raising the power usage. Using power management systems, IBM is pushing businesses to cut their energy use.

Having pioneered a broad range of quality paints for more than 88 years, Kansai Nerolac Paints has been at the forefront of paint manufacture (Fraccascia et al., 2023). Leading in the industrial industry and the second biggest paint manufacturer in India, it Since they eliminated dangerous heavy metals from their paints and are promoting lead-free paints in India, Kansai Nerolac Paints is presenting itself as green (Nam et al., 2017). They have created lead-free by design and made the effort to eliminate the heavy metals from their assortment of home décor goods. Kansai Nerolac uses no lead or any other such heavy element in its production method.

Methodology

This research uses the survey approach. These days, the survey instrument is a common and accepted research tool used all throughout the world. It entails carefully timed prepared questions to a representative cross-section of the population. Social and behavioural sciences typically find appropriate use for surveys. This is field research right here. Either a census or sample polls might be used here.

Although research on the possible benefits of green marketing from a marketing perspective as well as its impact on the consumer demographic, remains lacking, the idea that socially responsible behaviour constitutes sound market practice and yields favourable outcomes for businesses is getting acceptance. There is still little empirical study on how consumer behaviour and environmentally sustainable practices interact.

The study is confined to the textile industry sector, with the population including customers of manufacturing businesses in Gujarat, who possess awareness about green products.

Research Question: What are the major factors of green sustainable practices influencing customer purchase intention in the Indian textile industry?

Aim of the research: To assess the consumer perception and purchase intention towards green products in the textile industry in India.

The sample sizes: The sample size for the research has been established at forty-six participants. A sample size of Forty-six is sufficiently large to produce normally distributed responses and effectively elucidate the importance of the study.

Results

Demographic results

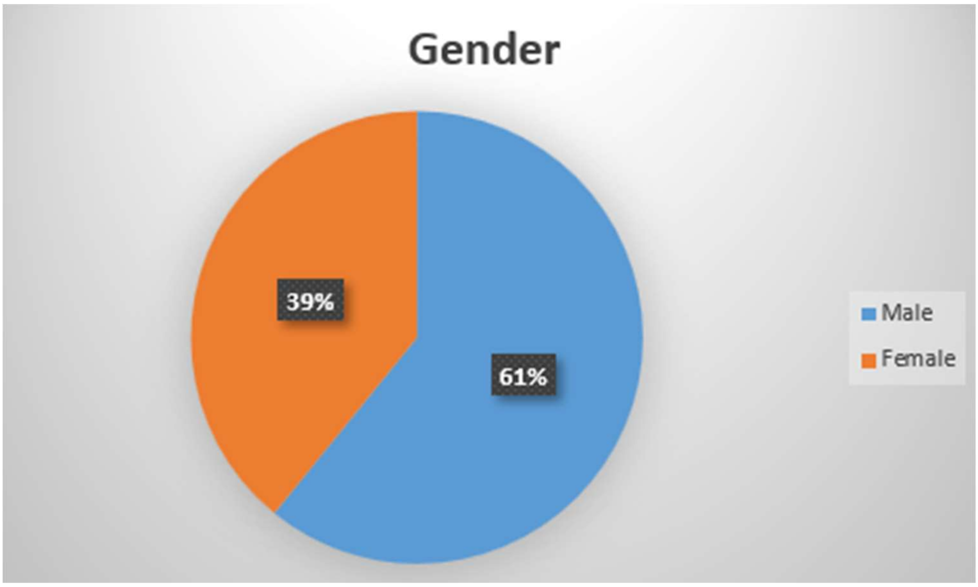

Fig. 1 Gender of survey participants (Result analysis)

Figure 1 shows the gender distribution of the research participants: 60.87% of the respondents are men (28 persons), whereas 39.13% of the female participants make up a lesser share (18 individuals). This distribution points to a gender gap among the respondents, maybe implying that male customers and workers are more engaged in the textile sector or were more easily available for the research. Analysing how attitudes and actions could differ across many groups in the research depends on an awareness of gender representation.

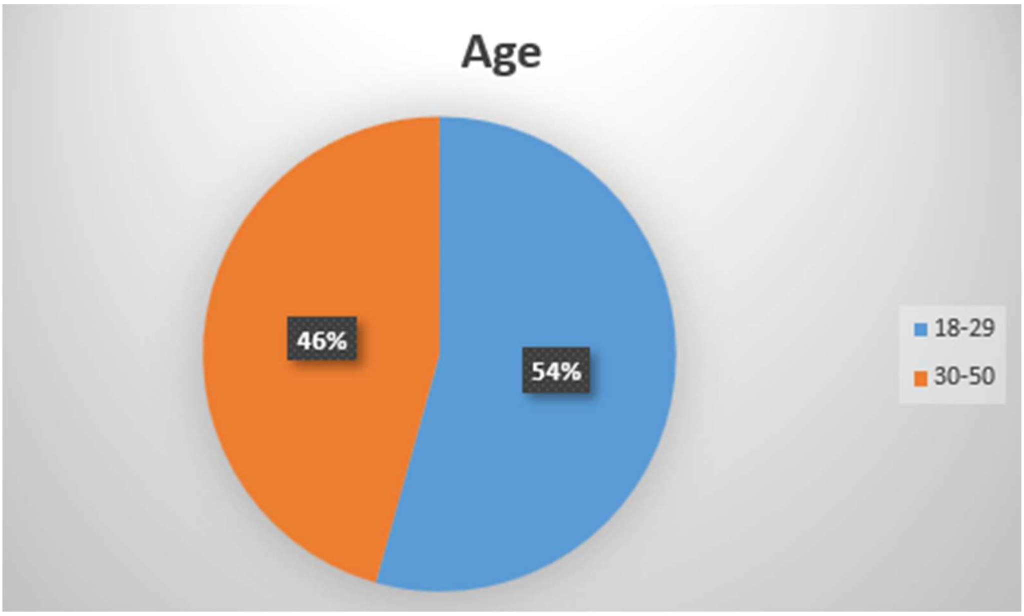

Fig. 2. Age of survey participants (Result analysis)

Divided into two groups, 18 to 29 years and 30 to 50 years Figure 2 shows the participant age range. According to the statistics, 25 respondents (54.35%) are in the younger age range of 18–29 while 21 respondents (45.65%) fall between 30 and 50. This somewhat balanced distribution implies that the research fairly reflects the ideas from younger and middle-aged people. The prevalence of younger participants suggests that the textile sector is drawing younger people – either as customers or workers – who are actively involved in buying and industry-related conversations.

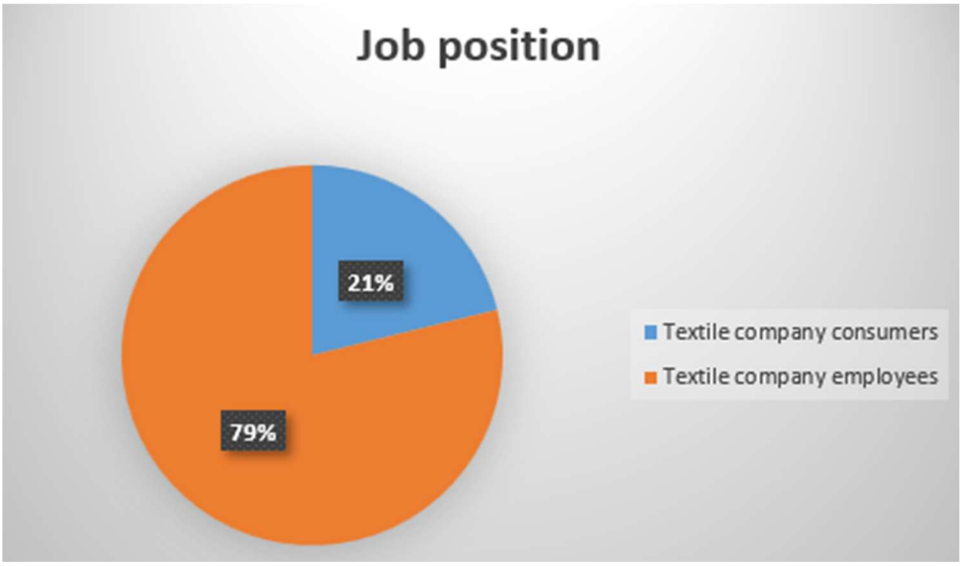

Fig. 3. Job position of survey participants (Result analysis)

Figure 3 lists the respondents' occupational positions and classifies them as either customers of textile companies or employees. While a lesser percentage (11 people, or 21.15%) are customers, most of the participants, 41 people, or 78.85% - are workers in textile enterprises. This difference implies that the research mostly concentrates on employee viewpoints, which might provide insightful analysis of business operations, working circumstances, and professional experiences. The somewhat smaller number of consumer responders, however, might point to the necessity of more consumer-based insights to counter the results.

Descriptive statistical analysis

Table 1. Descriptive statistical analysis (Source: Field data)

	N	Mean	Std. Deviation
Green textile products are reasonably priced.	46	3.5500	0.99868
The higher price of green textile products is justified by their benefits.	46	3.4000	1.27321
Green textile products are widely available in the market.	46	3.7500	0.78640
I find it difficult to differentiate between green textiles and conventional textiles.	46	3.3500	1.18210
Green textile brands are more ethical compared to conventional brands.	46	3.7000	1.17429
Valid N (listwise)	46		

Based on field data from 46 respondents, Table 1 offers the descriptive statistical analysis of customer opinions on green textile goods. Although with limited agreement, the findings show that respondents usually see green textile items as moderately priced (Mean = 3.55, Std. Dev. = 0.99868) and admit that their greater price is justified by their advantages (Mean = 3.40, Std. Dev. = 1.27321). Green textiles' availability on the market is judged quite high (Mean = 3.75, Std. Dev. = 0.78640), indicating that consumers find them easily available. Some respondents, on the other hand, find it difficult to distinguish green fabrics from conventional ones (Mean = 3.35, Std. Dev. = 1.18210), which would point to a need for more exact branding or labelling. Reflecting good customer attitude toward sustainability-oriented businesses, lastly there is a significant belief that green textile firms are more ethical than conventional ones (Mean = 3.70, Std. Dev. = 1.17429.). The standard deviations reveal different degrees of agreement; answers vary most between price justification and ethical view.

Factor analysis

Factor analysis has been conducted to identify the significant factors of consumer perception impacting customer purchase intention.

Table 2. Rotated component matrix (Result analysis)

	Component	
	1	2
Green textile products are reasonably priced.	.943	
The higher price of green textile products is justified by their benefits.	.922	
Green textile products are widely available in the market.		.820
I find it difficult to differentiate between green textiles and conventional textiles.		.641
Green textile brands are more ethical compared to conventional brands.	.525	.627

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

Table 2's rotated component matrix shows the findings of factor analysis meant to pinpoint the main elements influencing customer perception influencing purchasing intention toward environmentally friendly textile items. Two different components were obtained by means of Principal Component Analysis (PCA) with Varimax rotation. Component 1 mostly relates to price-related views; high loadings for green textile items are moderately priced (0.943) and their greater price is justified by their advantages (0.922), therefore showing that cost factors greatly impact customer opinion. Component 2 captures availability and differentiation; green textile items (0.820) load heavily and difficulty in differentiating green textiles from conventional ones (0.641) loads substantially as well. Especially, the belief that green textile companies are more ethical has modest loadings on both components (0. 525 in Component 1 and 0.627 in Component 2), suggesting that ethical branding affects issues linked to availability and pricing perception as well. Convergent across three iterations, the study emphasizes two main factors as main drivers of customer perception influencing purchase intention: price justification and accessibility.

Conclusions

1. The factor analysis shows that purchase intention is much influenced by customer view of pricing reasonability and justification. Given large loadings in Component 1, it is clear that before deciding what to buy, customers assess the value and cost of green textile goods. This implies that to increase customer acceptability, price policies and open communication of advantages must be absolutely crucial.
2. Availability and uniqueness of green textile items are the second main determinant of customer opinion. According to the study, consumers understand these items exist on the market but can find it difficult to set them apart from traditional fabrics. This suggests that improved consumer education, marketing, and product labelling are needed to raise acceptance and confidence in environmentally friendly textile goods.

3. The belief that green textile companies are more ethical influences both availability-related and price-related factors somewhat. This implies that ethical branding might be a strategic difference for businesses in the green textile sector and shapes customer sentiments in two separate ways. Companies that stress their ethical policies might boost customer confidence and inspire more buying intention.

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Anand Unnikuttan. EVALUATION OF THE RELATIONSHIP BETWEEN CORPORATE SOCIAL RESPONSIBILITY AND CONSUMER PURCHASE INTENTION OF INDIAN MANUFACTURING COMPANIES

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Abstract

Research relevance: For Indian manufacturing industries, corporate social responsibility is significant for attracting customers towards their products. Companies that have a net worth of five million dollars or more are required to spend at least two percent of their average net income on corporate social responsibility initiatives, as stipulated by the Indian Companies Act of 2013, which was passed in 2013. It has been shown through research that 62 percent of Indian consumers are likely to rely their purchasing decisions on the social and environmental responsibilities of a commercial enterprise. A further finding from a study conducted by Nielsen in 2022 indicated that 74 percent of Indian millennials are more inclined to make purchases from businesses that engage in ethical activities. This finding highlights a rising preference for corporations that are dedicated to social responsibility.

Research goal: To identify impact factors of corporate social responsibility on consumer purchase intention of Indian manufacturing companies.

Research methods: In this study the research methods have been divided to data collection and data processing methods. The data collections are analysing literature review and survey analysis. These analysis have been conducted to analytical review the corporate social responsibility and consumer purchase intention. Moreover, different statistical methods have been used in this study and those are descriptive data analysis, frequency analysis of survey participants and factor analysis in order to identify impact factors of corporate social responsibility on consumer purchase intention of Indian manufacturing companies.

Main findings: Responsible company practices, community participation, social welfare activities, and environmental sustainability projects are examples of impact factors that appeal with consumers that are committed to social responsibility. When businesses show that they are truly committed to these corporate social responsibility efforts, it establishes an emotional connection with their consumers. As a result, customers are more willing to support brands that are in line with their beliefs. In addition, corporate social responsibility (CSR) initiatives enhance the legitimacy of brands and separate businesses from their rivals, therefore increasing the attraction of socially responsible goods to customers.

Keywords: Corporate social responsibility; Consumer purchase intention; Indian manufacturing companies; Environmental responsibilities.

Introduction

Because the firm and society are mutually reliant on one another, it is the responsibility of the company to engage in acts of corporate social responsibility (CSR). The corporation is concerned about the well-being, stability, and success of the communities in which it does its business. At this point in time, corporations are no longer considered to be economically autonomous organizations with the only purpose of generating profits and with no regard for common people. It is not possible for businesses to function as autonomous economic entities that have a disinterested attitude toward society. In today's age of globalization, liberalization, and privatization, it is a well-known and widely recognized reality that successful company empires are constructed via the contributions of society. This is due to the fact that businesses are a component of society and cannot survive in isolation inside societies. It is impossible for it to be successful in a society that is plagued by social unrest brought on by issues such as economic disparity, inequality, and social fairness.

The relevance of corporate social responsibility (CSR) has increased over the last few years as a result of public scandals and poor management. It is necessary to make certain that there is no societal discontent and that there are sufficient CSR. The need for corporate social responsibility (CSR) on a global scale has risen as a result of business scandals and failures not just in developed nations like India but also in developing countries like Nigeria. As a result of the misconduct that occurred at Enron, Global Crossing, Adelphia, and World.com in the United States, as well as the corporate scams that occurred in a number of other countries, the faith of investors and other stakeholders in the integrity of those who are responsible for the oversight and administration of big organizations has been badly damaged. In addition, the businesses are compelled to act in a socially responsible way because of the rising knowledge among the general public and the demand that they exhibit for openness. The general public has a preference for businesses that are socially responsible, and they are also favoured for the products and services they provide. A corporation whose only focus is to generate profits for its shareholders will, as a result, violate the ethical and socially responsible expectations of its stakeholders, causing those stakeholders to feel unhappy. This, in turn, will lead to the need for and acceptance of corporate social responsibility. India is the only nation in the world that has legal requirements for corporate social responsibility, and the government has made it necessary for businesses to engage in CSR. As a result of the public's growing awareness of the notion of corporate social responsibility (CSR), several companies, both public and private, are actively participating in CSR initiatives. There has been a surge in the need for specific information on whether or not firms are following acceptable CSR criteria from all of the stakeholders of the company, including customers, workers, statutory authorities, and the general public. Therefore, it is of the utmost importance to determine whether or not it has had any influence among the many stakeholders of the society, particularly the most important stakeholder, which is referred to as "the consumer."

Therefore, in order for businesses to repay at least some of what they have acquired, they should serve the society by providing provisions for health, education, and literacy, among other advantages. Traditionally, business enterprises have been recognized as engines that propel the economic performance of an entity. The success of these companies is evaluated based on their ability to generate high returns on equity and their contribution to the development of society and the economic prosperity of the country. It is the responsibility of the commercial enterprises to reciprocate favorable sentiments toward the society in which they operate since they get all they need from the community in order to continue existing at all. The company will be punished by the society via the actions of its consumers if it is unable to live up to the standards that have been set by the collective.

Literature review

Codron, Siriex, and Reardon (2006) examined the environmental and ethical characteristics of food items and their manufacturing methods. The authors examined the two pertinent subject domains: environmental and social. Each domain encompasses two motions.
The authors first examined the four movements that have highlighted new dimensions of food product quality: the first features of environmental ethics, namely organic agriculture and integrated agriculture, and the second component of social ethics, namely fair trade and ethical commerce. The writers delineated the participants in the movements, namely the manufacturers, retailers, NGOs, and governments, and elucidated how consumers saw each movement. Consumers sometimes conflate the

organic producing movement with the integrated agricultural movement due to their shared focus on environmental concerns. The report ultimately recognized the obstacles encountered by advocates of food items with environmental and social/ethical features in their efforts to convey cohesive messages to consumers during this pivotal period in the development of a mass market for such goods. Britain was progressively reflecting many countries on the persistent increase in prevalent ailments presumably associated with human food intake. The research examined customers' views of the nature and magnitude of the issues within the food business. To examine, three goods included in the research were positioned on a continuum; chocolates represented one end and genetically engineered foods the other.

Codron, Siriex, and Reardon (2006) highlighted that consumer perceptions vary depending on the type of product. For genetically modified products, consumers predominantly viewed manufacturers as responsible for providing adequate information, whereas in the context of fast foods and confectionery, both manufacturers and consumers were considered jointly accountable for consumption behaviours. Choi, Moon, Kim, and Lee (2008) investigated the relationships between corporate social responsibility (CSR) activities, perceived social investment, corporate identity, and firm evaluation. Their study focused on analysing how CSR efforts of a representative automotive manufacturing company in South Korea were perceived by consumers. Data were gathered from 175 customers interested in the vehicle manufacturing sector. Analysis revealed that product/service quality, employee support, community engagement, equal opportunity, and environmental preservation significantly influenced perceived social investment. The findings indicated a favourable correlation among perceived social investment, business-consumer identification, and company rating.

Wagner, Lutz, and Weitz (2009) examined how different corporate communication strategies influence consumer perceptions of corporate hypocrisy, particularly when there are inconsistencies between CSR claims and organizational behaviour. The study found that a proactive communication approach—where firms voluntarily communicate CSR information—can lead to higher perceptions of hypocrisy compared to a reactive approach, especially when contradictory information is present. These inconsistencies intensified consumer scepticism, making CSR messaging potentially counterproductive. Furthermore, the research demonstrated that perceived corporate hypocrisy negatively affects consumer attitudes, undermines beliefs in the company's social responsibility, and damages overall brand evaluation. These findings align with Choi, Moon, Kim, and Lee (2008), who similarly concluded that perceptions of CSR investments significantly influence consumers' evaluations of the company.

The study highlighted the mediating role of perceived corporate hypocrisy in information processing, demonstrating that the level of abstraction in CSR policy messages can reduce the reputational risks associated with proactive communication strategies while enhancing the effectiveness of reactive approaches. In their 2010 research, Arli and Lasmono examined consumer perceptions of CSR in Indonesia, revealing that CSR remains poorly understood and weakly integrated within emerging markets. Their findings showed that many Indonesian consumers lack both awareness and support for CSR initiatives, prioritizing low-cost products over socially responsible practices. This contrasts with patterns observed in developed countries, where consumers tend to be more informed about CSR, express stronger approval of socially responsible firms, and are more likely to consider CSR performance in their purchasing decisions.

Corporate Social Responsibility is not yet a decisive element in purchasing a product from a corporation. However, this article revealed an intriguing discovery that when customers purchase comparable items with same price and quality, Corporate Social Responsibility (CSR) may serve as the decisive element.

They would purchase from the company that have a socially responsible reputation. This showed that corporate social responsibility may serve as an advantageous strategy for a corporation operating in a competitive landscape and engaging in a socially responsible way.

Li, Zhang, Mao, and Min (2011) examined consumer perceptions of corporate social responsibility (CSR) in China's sports lottery sector and explored how perceived CSR activities influence purchasing behaviour. Using a computer-generated stratified multistage sampling approach, the study surveyed Chinese citizens who had purchased sports lottery tickets within the previous 12 months. Data were collected using a questionnaire derived from prior qualitative research. Factor analysis revealed two key dimensions of perceived CSR: regulatory and preventive responsibility and product development responsibility. Logistic regression results indicated that both CSR dimensions significantly affected consumer behaviours, including purchase frequency, relative and absolute spending, and time commitment. This study represents one of the first attempts to conceptualize CSR perceptions within the Chinese sports lottery context.

Wang and Juslin (2011) further contributed to CSR literature by investigating how personal values shape individuals' perceptions of CSR implementation, highlighting the importance of value-driven interpretations in evaluating corporate responsibility efforts.

Since the middle of the 1990s, a number of the most prominent corporations have been actively participating in the practices of corporate social responsibility. Nowadays, corporate social responsibility (CSR) has become a widespread idea, and there are many wonderful and magnificent instances of it; Indian CSR is now experiencing expansion. Some of the companies that are active in corporate social responsibility initiatives are Infosys, Bharti Enterprises, ITC Welcome group, and Indian Oil Corporation, amongst others. These programs focus on topics like as education, health, the creation of livelihoods, the development of skills, and the empowerment of poorer sectors of society, among other things. There are four Indians included in the list of the "48 Heroes of Philanthropy" that Forbes Asia compiled in 2010. The disclosure of corporate social responsibility standards is becoming more important in India, which has been recognized as one of the leading Asian nations in this regard.

Methodology

This study employs the survey methodology. Currently, the survey instrument has emerged as a prevalent and recognized research methodology globally. It involves posing structured inquiries to a representative cross-section of the population at a certain moment in time. Surveys are often suitable for social and behavioural sciences. This exemplifies field research. It may be either a census or sample surveys.

The notion that socially responsible behaviour constitutes sound market practice and yields favourable outcomes for businesses is gaining acceptance; however, research on the potential advantages of social responsibility from a marketing standpoint, as well as its impact on the consumer demographic, remains insufficient. Empirical research on the relationship between Corporate Social Responsibility practices and customer behaviour remains sparse.

The study is confined to the Manufacturing sector, with the population including customers of manufacturing businesses in Tamil Nadu, who possess awareness about CSR.

Research Question: What are the major factors of CSR influencing customer purchase intention in Indian manufacturing industry?

Aim of the research: To identify the impact of the CSR on the customer purchase intention in Indian manufacturing industry.

The sample sizes: The sample size for the research has been established at twenty-six participants. A sample size of twenty is sufficiently large to produce normally distributed responses and effectively elucidate the importance of the study.

Results

Demographic results

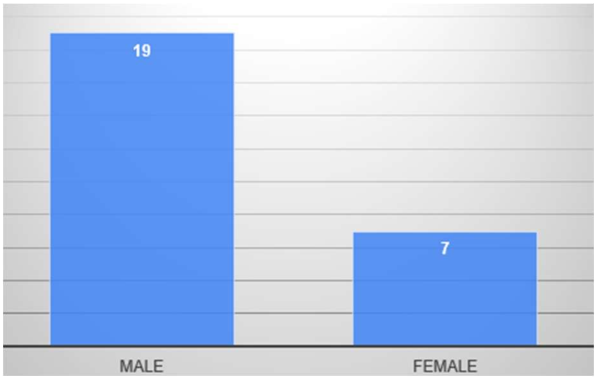

Fig.1. Gender of survey participants (Result analysis)

From the figure 1, 2 and 3, it has been understood that the demographic segmentation of survey data. The sample comprises 26 individuals divided across gender, age, and job position demographics. Among the participants, there is a larger representation of males (19) compared to females (7). This gender distribution could influence any gender-specific insights, such as preferences or behaviours, especially in fields where gender roles might traditionally vary. This demographic balance may also have implications on the analysis, potentially highlighting insights more pertinent to male perspectives within the sample.

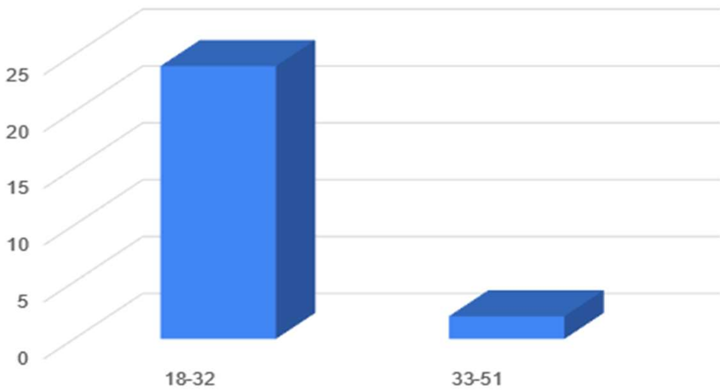

Fig. 2. Age of survey participants (Result analysis)

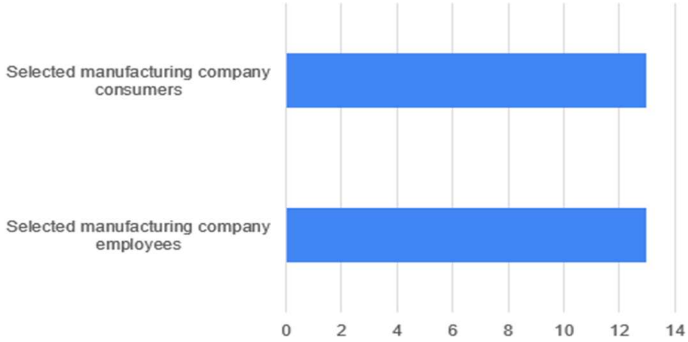

Fig. 3. Job position of survey participants (Result analysis)

In terms of age, the majority (24) of participants are between 18-32 years, with only 2 participants in the 33-51 age range, suggesting that insights drawn may largely reflect the opinions of a younger demographic. The sample is equally split between employees and consumers of a selected manufacturing company, with 13 participants from each group. This balance between employees and consumers provides a well-rounded perspective, allowing for comparisons in attitudes or perceptions that could differ between those directly working in the industry and those purchasing its products.

Descriptive statistical analysis

Table 1. Descriptive statistical analysis (Source: Field data)

	N	**Mean**	**Std. Deviation**
Customers are increasingly conscious of environmental issues, so initiatives such as reducing emissions, minimizing waste, and adopting sustainable practices are highly valued.	20	3.5500	0.998
Fair wages, safe working conditions, and ethical treatment of workers are critical CSR components.	20	3.4000	1.273
Active involvement in local community welfare, such as education programs, healthcare initiatives, and rural development, is another impactful CSR factor.	20	3.7500	0.786
Openness in operations and transparency in CSR efforts, including regular CSR reporting, build consumer trust.	20	3.3500	1.182
CSR efforts that focus on high product quality and safety standards are crucial.	20	3.7000	1.174
Valid N (listwise)	20		

Table 1 provides a descriptive statistical analysis of significant CSR elements affecting consumer purchase intention, derived from answers of 20 participants. Each aspect is measured by its mean score and standard deviation, offering insights into the degree of consensus and variety among respondents. The element with the highest mean score (3.75) is active participation in community development projects, indicating robust endorsement for enterprises involved in social welfare activities, whilst the environmental responsibility aspect garnered modest agreement (mean = 3.55). Ethical work practices received a mean score of 3.40, accompanied by significant variability (SD = 1.27321), indicating divergent perspectives on their significance. The transparency of CSR initiatives obtained a score of 3.35, indicating varied opinions, whereas product quality and safety requirements achieved a commendable mean score of 3.70. The study highlights that customers value community participation, product integrity, and environmental activities, whereas opinions on labour standards and transparency differ.

Factor analysis

Factor analysis has been conducted in order to identify the significant CSR factors impacting customer purchase intention.

Table 2. Rotated component matrix (Result analysis)

	Component	
	1	**2**
Customers are increasingly conscious of environmental issues, so initiatives such as reducing emissions, minimizing waste, and adopting sustainable practices are highly valued.	.943	
Fair wages, safe working conditions, and ethical treatment of workers are critical CSR components.	.922	
CSR efforts that focus on high product quality and safety standards are crucial.		.820
Active involvement in local community welfare, such as education programs, healthcare initiatives, and rural development, is another impactful CSR factor.		.641
Openness in operations and transparency in CSR efforts, including regular CSR reporting, build consumer trust.	.525	.627

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

Factor analysis was used to ascertain the key CSR elements affecting consumer purchase intention, as shown in Table 2, which displays the Rotated Component Matrix derived from the study. The extraction technique used was Principal Component Analysis (PCA), and the rotation method utilized was Varimax with Kaiser Normalization, signifying an emphasis on optimizing the variance elucidated by each component. The investigation identified two primary components, each emphasizing distinct facets of CSR.
The first component has significant loadings for environmental efforts (.943), ethical labour practices (.922), and product quality and safety standards (.820), suggesting a substantial correlation among these characteristics and their importance in influencing consumer impressions. The elevated values indicate that customers emphasize environmental awareness and ethical labour practices, in addition to anticipating superior product quality. The second component encompasses community engagement (.641) and transparency in CSR initiatives (.525 and .627), indicating that while these elements are significant, they have somewhat less influence than the first group. The rotation converged within three iterations, indicating that the model attained a stable solution rapidly. The factor analysis successfully identifies the main CSR aspects that substantially influence consumer purchase intention, underscoring the relevance of environmental responsibility, ethical behaviours, and product integrity within the manufacturing industry.

Conclusions

1. The investigation reveals that consumers prioritize environmental sustainability and ethical labour practices as essential elements of corporate social responsibility (CSR). These variables

considerably affect consumer views and buying choices, indicating that manufacturing firms have to pursue environmental efforts and equitable labour practices to fit with customer ideals.

2. In addition to environmental and ethical concerns, product quality and safety requirements are key determinants of client purchase intention.
3. Although community engagement and openness in CSR initiatives are significant, their impact seems to be diminished relative to the key variables outlined. This indicates that while customers value enterprises that participate in community welfare and demonstrate transparency, these aspects work as supplementary factors rather than principal motivators of purchase intention.

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Muhammed Arshid. ASSESSMENT OF IMPACT OF RELATIONSHIP MARKETING ON CUSTOMER LOYALTYIN TELECOMMUNICATION INDUSTRY IN KERALA, INDIA

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Abstract

Research relevance Companies in the communications sector have to do their all to maximize customer happiness. In this situation, satisfying their clients depends much on relationship marketing. Any service sector, but particularly the communications sector, relies mostly on the clients. Thus, every service sector must have continuous client interaction if it is to expand.

Research goal: to assess the impact of relationship marketing strategies on customer loyalty in the telecommunication industry in Kerala, India.

Research methods: There are a variety of methods that can be applied for the purpose of data-gathering procedures. Two of these methods are survey analysis and Literature review. In this research, the author has used descriptive and factor analysis.

Main findings: Data analytics, which provides analytical information about consumer behaviour, selections and purchasing patterns, is critical for enhancing targeted advertising strategies in India's e-commerce market. Companies can create personalized advertisements by gathering information from multiple sources, such as search queries, social media interactions.

Keywords: Branding; Data analytics; Targeted audience; E-commerce sector; Consumer behaviour.

Introduction

The topicality of the research is communications sector have to do their all to maximize customer happiness. Under this situation, satisfying their clients depends much on relationship marketing. Any service sector, but particularly the communications sector, relies mostly on the clients. Thus, every service sector must have a continuous client interaction if it is to expand.

This research study aims to assess the impact of relationship marketing strategies on customer loyalty in the telecommunication industry in Kerala, India.

There are a variety of methods that can be applied for the purpose of data-gathering procedures. Two of these methods are survey analysis and Literature review. In this research the author has used descriptive and factor analysis.

For companies functioning in competitive surroundings, relationship marketing is becoming the main focus of their marketing activities. It emphasizes developing long-term relationships and keeping a constant contact with clients. A corporation may provide more tailored and relevant one-to-one service by learning over time the requirements and desires of its consumers.

With its emphasis on customer connections as opposed to one-time transactions, relationship marketing has been seen as a paradigm shift that has completely changed the discipline of marketing. Both businesses and consumers engaged in such reciprocal interactions benefit from it, so marketers began to concentrate on strengthening customer relationships.

In order to complement the idea of consumer happiness in trying to understand the dynamics behind long-term partnerships, marketers brought the idea of trust and commitment toward one's consumers. Companies pay six times more to attract clients than they do to retain them. To keep their current consumers and raise their share of sales, many companies are therefore increasingly putting greater focus on their interactions with them.

Most modern marketers concentrate on luring consumers from their target markets using the tools and strategies established for mass marketing in the industrial age. In most competitive marketplaces, this is clearly quite useless.

Reduced growth rates, more fierce competition, and technology advancements caused companies to seek for strategies to lower expenses and increase efficiency.

Given the somewhat high beginning costs, relationship marketing seems to be an expensive substitute for mass marketing for businesses. Only if it would help them would companies choose relationship marketing. Customers who have a connection with a company are voluntarily restricting their alternatives and therefore excluding other possibilities. Some of the personal reasons to do so come from less information processing and more effective decision-making.

Research relevance is that companies in the communications sector have to do their all to maximize customer happiness. In this situation, satisfying their clients depends much on relationship marketing. Any service sector, but particularly the communications sector, relies mostly on the clients. Thus, every service sector must have continuous client interaction if it is to expand. Using relationship marketing in a company is mostly meant to increase client loyalty. Customer happiness and loyalty depend on trust, dedication, service quality, customization, empathy, communication, emotional aspect, bonding, shared value, reciprocity, conflict management etc.

Literature review

Alrubaiee and Al-Nazer (2010) examined relationship marketing as a competitive strategic approach that encompasses managing customer touchpoints, strengthening profitability, building partnerships, fostering customer trust, understanding consumer psychology, protecting emotional well-being, and effectively engaging customer attention. In the hotel sector, these elements are practically observed, as many hotels design distinctive services and interactions to build closer relationships with their guests. Relationship marketing represents a paradigm shift in both academic and practical marketing domains. Although widely recognized and applied, it has not yet fully evolved into a distinct academic discipline. The authors propose that certain foundational themes need to be emphasized to support its disciplinary development. They contrast the stagnation of fields such as international, social, and business marketing with the successful emergence of consumer behavior, services marketing, and marketing strategy as established disciplines.

Gaurav (2008) explored the evolution of relationship marketing within the retail banking sector. From a services perspective, relationship marketing was defined as a process involving the attraction, maintenance, and enhancement of relationships between consumers and financial service providers. The study qualitatively examined four cases of relationship marketing practices in retail banking and emphasized that the intangibility and complexity of financial services, combined with consumers’ need for guidance and trust, make relationship marketing particularly significant in this sector.

Examining customer relationship management in India, (Yuliastuti, 2021) noted Adopting a two-stage approach, the study was exploratory in character. In the first step, 73 Indian service company managers were polled using respondent-based questions. In the second step, managers of particular companies in every sector of services were questioned to learn about their implemented relationship marketing strategies. They discovered that the telecom and information technologies sectors lead the way in formally implementing a quality control system. Most of the businesses in the hotel and financial sectors say they have certain strategies in place to guarantee efforts at quality control. Generally speaking, most managers feel they grasp most of the interactions between consumers and their corporate systems.

Considering that new technologies and elements are drastically altering internal and external company methods and goals, (Zegullaj et al., 2023b) examined the connection points of relationship marketing and the network economy. Globalisation, network based communication, and information technologies have changed the emphasis of consumer and partner management. Relationship marketing is the new paradigm, the formation and upkeep of long-term, cost-effective connections between individual consumers, suppliers, staff, and partners for mutual gain. The bottom line gains from this approach as well as keeping consumers costs much less than gaining them.

Nguyen and Hoang (2024) investigated the significance of relationship marketing for the efficient operation of marketing companies. Integration of the empirical and conceptual research in the field of corporate markets was the aim. Academic research in marketing is allegedly changing from transaction marketing to relationship marketing in line with a paradigm change. Actually, companies are also seeing relationship marketing as very essential for maintaining competitive edge.

Another study looked at how demand for tailored printed communication changed depending on relationship marketing approach. To find their preferences for popular relationship marketing strategies include receiving mail from companies they visit, obtaining e-mail notifications of promotions, joining frequent buyer programs and usage of customer care phone lines, an exploratory survey of 160 persons was done. According to the data, the respondents felt rather positive about direct marketing and catalogues. Commercial emails were seen as far less appealing. If a company's customer profile information includes preferences for customer contact, then its relationship marketing techniques will be effective.

Using a survey-based approach, another study explored the concept of relationship marketing and its organizational orientation. The findings highlighted that companies seeking to strengthen interactions with customers must continuously monitor their internal processes and behaviors. By regularly assessing their relationship marketing focus, organizations can track progress over time and adapt accordingly. Such assessment also enables management to design relevant and effective marketing strategies. Recognizing that a comprehensive conceptual framework for relationship marketing is still lacking, researchers have attempted to fill this gap by examining how relationship marketing develops across different economic and cultural contexts. This includes exploring how culturally embedded relationship structures are formed and how they influence marketing practices, as well as investigating the theoretical foundations that explain the growth of relationship-based marketing approaches.

Gaurav (2016) have advanced knowledge of the ways in which relationship marketing has evolved in the western economy and proposed some guidelines which must be followed to apply it effectively in developing nations. Though relationship marketing is a relatively new discipline of study, connection marketing theory is a really rich topic of research, they have discovered. Relationship marketing may take many different forms, hence theory of relationship marketing has the ability to improve one's knowledge of various facets of corporate strategy.

Effective relationship marketing will be crucial in case of financial service providers, according to Kanapathipillai and Mahbob (2021), as the services they provide are complicated, tailored, and offered across an ongoing flow of transactions. Many consumers are somewhat naive about the service, meaning they lack the technical expertise and experience to assess technical service results. Moreover, clients' lack of technical understanding about the results could skew or limit their view of their service quality and influence their degree of trust in a financial service provider. Thus, building a long-term connection with the clients becomes one of the main issues facing the financial service providers.

Abtin and Pouramiri (2016) investigated the aspects of relationship marketing in Romanian banks. The viewpoints of using a relationship marketing idea in the Romanian businesses are connected with a shift of attitude toward the served audience. To meet their expectations, the Romanian entrepreneur must become more discriminating, selecting the most lucrative clients and providing the finest in marketing.

From the standpoint of many high educational institution experts and academic staff, Upadhyay (2024) investigated the theoretical basis of the relationship marketing concept and its impact on organisational performance indicators. Relationship marketing idea and organizational performance indicators have shown a good correlation, they have discovered.

Zegullaj et al. (2023) investigated the relationship marketing as a successful tactic under Igbo's management of Small Medium Enterprises in Nigeria. They have discovered in the Small Medium Enterprises sector and the Igbo managed Small Medium Enterprises whether small, medium or big, have realized that one certain means of survival is to embrace, implement and adopt the relationship marketing idea and the techniques. With the rising competitiveness, the rate of acceptance, usage adoption and implementation of the relationship marketing concept is fast growing. The managers of these Small Medium Enterprises, especially the literary ones, are aware of the principles, practices and philosophy of the relationship marketing concept.

Methodology

The process step that describes how the study was carried out is known as research methodology. This research study employs a particular methodology.

This research study aims to assess the impact of relationship marketing strategies on customer loyalty in the telecommunication industry in Kerala, India.

Research relevance is that companies in the communications sector have to do their all to maximize customer happiness. Under this situation, satisfying their clients depends much on relationship marketing. Any service sector, but particularly the communications sector, relies mostly on the clients. Thus, every service sector must have a continuous client interaction if it is to expand.

Sevengty respondents in all were covered by this study, and the sample of seventy respondents was chosen with the intention of conducting the research as intended. These e-commerce customers include IT professionals and e-commerce marketers.

Table 1. Demographic information of respondents (Source: field data)

Item	Contents	No: of samples
Gender	Male	42
	Female	28
Age	19-25	39
	26 and above	31
Job position	Telecommunication company employees	9
	Telecommunication company consumers	61

This study's primary goal is to pinpoint the key growth drivers of relationship marketing for the expansion of telecommunication industry in India. The research literature is analyzed as part of the study's research methodology. A total of twelve research publications were gathered and examined.

Primary data of 60 respondents were collected by questionnaire using convenient sampling methods.

All questionnaire responses were provided on a five-point Likert scale, with 1 denoting "strongly agree" and 5 denoting "strongly disagree." English is regarded as one of the primary languages in India, which is why the questionnaires were given out in that language.

Results

Demographic results

Based on gender, age, and employment position, Table 1 shows, using field data, the demographic distribution of respondents. With 42 men and 28 women among the 70 responders, the male participation rate is higher. Regarding age, 39 respondents fell into the 19–25 range and 31 are 26 years of age or above, therefore demonstrating a somewhat equal distribution across age groups. About employment, just 9 respondents are workers of telecommunication businesses whereas most (61 respondents) users of telecommunication services. Analyzing patterns and insights in the research depends on a basic knowledge of the respondent pool, which this demographic split offers.

Descriptive statistical analysis

The major goal of the survey questions is to evaluate the influence of data analytics on targeted advertising in ecommerce. Consumer segmentation, the examination of browser history and other behavioral data, and the use of predictive models to estimate customer behaviors such as purchases, or attrition are among the topics covered. The study examines real-time analytics that provide immediate campaign adjustments, as well as data-driven customization that ensures advertising is engaging and relevant. Moreover, channel attribution elucidates which channels provide the greatest conversion rates, while sentiment analysis from social media and reviews facilitates tailored messaging. Finally, look-alike modeling assists organizations in identifying new customers who match their lucrative target demographic. The primary objective of these analytics tools is to enhance campaign effectiveness, engagement, and advertisement relevance.

Table 2. Descriptive statistical analysis (Source: Field data)

	N	Mean	Std. Deviation
The telecom provider maintains regular communication with me through digital platforms.	60	3.5500	0.998
I receive personalized offers based on my usage patterns.	60	3.4000	1.273
The company responds promptly to my queries through online channels.	60	3.7500	0.786
The telecom provider engages with me on social media.	60	3.3500	1.182
The company offers a user-friendly mobile app for customer service.	60	3.7000	1.174
Online chat support is efficient and helpful.	60	3.5000	1.100
My concerns are addressed effectively through digital customer service.	60	3.6000	0.994
I receive timely updates on service improvements and offers.	60	3.8889	1.131
Valid N (listwise)	60		

Table 2 shows the descriptive statistical study of the 60-person replies on their encounters with digital relationship marketing in the telecom industry. The mean values indicate modest agreement with several facets of digital communication, customer service, and engagement; they vary from 3.35 to 3.89 For the statement "I get timely updates on service improvements and offers," for instance, the highest mean score—3.89—suggesting a really strong favorable view. With some items showing more dispersion (e.g., "I receive personalized offers based on my usage patterns" with a higher standard deviation of

1.27), reflecting different degrees of experience or perception among participants, the standard deviations, which run from 0.79 to 1.27, indicate variability in the responses. These findings provide an understanding of how well digital relationship marketing campaigns maintain consumer involvement and happiness.

Identifying Major factors of data analytics

This part explains the major factors of relationship marketing impacting

Table 3. Rotated component matrix (Result analysis)

	Component		
	1	**2**	**3**
The telecom provider maintains regular communication with me through digital platforms.	.963		
I receive personalized offers based on my usage patterns.	.960		
The company responds promptly to my queries through online channels.	.724		
The telecom provider engages with me on social media.		.818	
The company offers a user-friendly mobile app for customer service.		.800	
Online chat support is efficient and helpful.		.776	.502
My concerns are addressed effectively through digital customer service.			.928
I receive timely updates on service improvements and offers.			.855

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

Table 3 shows the underlying data factors by means of the findings of the rotated component matrix derived from a Principal Component Analysis (PCA) using Varimax rotation. From the study three separate elements surfaced. Component 1, with strong loadings on things like "The telecom provider maintains regular communication with me through digital platforms" and "I receive personalized offers based on my usage patterns," most certainly reflects "communication and personalization." Emphasizing "social media and digital interaction," Component 2 is connected with social media engagement, mobile app usability, and online chat assistance. Reflecting "customer service and timely updates," Component 3 includes products connected to excellent customer service and timely updates. These parts provide a thorough awareness of the many aspects of digital relationship marketing that affect telecom industry client impressions.

Conclusions

1. Good Communication Improves consumer Engagement: According to the report, frequent communication and tailored offers made on digital platforms are the main forces behind consumer engagement in the telecom sector. High ratings for topics connected to communication and customization point to consumers' appreciation of regular engagement and customized experiences, which in turn helps to deepen their relationship to the telecom provider.
2. Customer satisfaction is strongly influenced by social media and digital tools: The findings underline how important user-friendly digital tools such as mobile applications and online chat assistance are in promoting good customer experiences utilizing social media interaction. Effective use of these platforms by telecom companies would probably help them to establish closer bonds with their clients as these components are seen as handy by them.

3. Quick and good customer service encourages loyalty. Customer loyalty is much enhanced by timely information on service enhancements and the efficient resolution of issues via digital customer support. The research emphasizes the need of timely and effective customer service in preserving long-term client happiness and loyalty within the telecom sector.

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Arunmon Poulose. ASSESSMENT OF IMPACT OF DIGITAL MARKETING ON TOURISM INDUSTRY IN KERALA, INDIA

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Abstract

Research relevance: One transforming instrument in worldwide tourist promotion is digital marketing. Often referred to as "God's Own Country," Kerala's tourist sector makes a major economic contribution—with over 5000 million USD projected in 2022. Targeted internet ads, search engine optimization (SEO), and social media channels have let travel industry players properly reach a worldwide audience. Still up for debate, however, is how much digital marketing plans influence visitor involvement and company expansion in Kerala. This paper attempts to evaluate how digital marketing affects the travel sector in Kerala.

Research goal: To assess the impact of digital marketing on the growth and performance of the tourism industry in Kerala, India,

Research methods: Primary data from visitors to Kerala and tourism sector players is gathered in this study using a survey-based research approach. Designed to gather respondents' demographics, digital marketing awareness, degree of involvement, and decision-making style, a structured questionnaire

Main findings: The predictive model verifies that a significant amount of travel increase may be explained by digital marketing policies. With an adjusted R^2 of 0.444 and a statistically significant F-value (4.720, $p = 0.003$), the results underline how important digital platforms are in determining consumer behavior and raising travel demand in Kerala.

Keywords: Digital Marketing; Tourism industry; Employee engagement; Performance.

Introduction

Social media digital marketing generates venues for user interactions and input. Digital marketing, also known as online marketing, is a brand promotion to interact with potential consumers via the internet and other digital channels. This covers not just web-based advertising, email, social media, and text and multimedia messaging as a marketing tool. Based on their travel experiences, visitors could provide good or bad evaluations. Research relevance is that one transforming instrument in worldwide tourist promotion is digital marketing. Often referred to as "God's Own Country," Kerala's tourist sector makes a major economic contribution—with over 5000 million USD projected in 2022. Targeted internet ads, search engine optimization (SEO), and social media channels have let travel industry players properly reach a worldwide audience. Still up for debate, however, is how much digital marketing plans influence visitor involvement and company expansion in Kerala. This paper attempts to evaluate how digital marketing affects the travel sector in Kerala.The research goal is to assess the impact of digital marketing on the growth and performance of the tourism industry in Kerala, India,

Research methods are Primary data from visitors to Kerala and tourism sector players is gathered in this study using a survey-based research approach. Designed to gather respondents' demographics, digital marketing awareness, degree of involvement, and decision-making style, a structured questionnaire

Digital marketing is more oriented on connections than on purchases. Digital marketing may assist you dominate search engine results. Kerala Tourism adopted the internet marketing tool early and planned its digital expansion carefully. Promoted by Kerala Tourism, the YouTube channels and micro-sites reflect a great accomplishment. Any good or service depends on strong digital marketing platforms to be successful. This investment is the most reasonably priced one for which one may quickly see results. Everything now exists online; similarly, tourism has evolved there.

Social media now serves as a link between visitors and locals. Governments are using social media to advertise their travel and this sort of encouragement has shown to be the most successful one. People browse social networking sites to learn about their vacations, decide on their destinations, and post their own impressions of certain hotels, restaurants, businesses, and modes of transportation.

From time immemorial, Kerala—a coastal area bursting with colour and with a distinctive culture—has drawn visitors from all across the world. Kerala tourism never looked back ever in its expansion; known for its scenic beauty, natural beauty, and other attractions, it never had to do. With its Western Ghats and spanning tropical evergreen, deciduous, and semideciduous forests home to some rare, exotic plant life and animals, Kerala is well-known for its heavily wooded mountain ranges.

Every person today spends everyday life using the internet, social media, smartphone applications, and other digital communication technology. When it comes to investigating and making purchases of either a product or a service, the contemporary customer is progressively turning toward a more digital experience. Many times, they rely on Search Engines such as Google, Yahoo, Bing, and others. The firms' efforts should be easily apparent during these digital searches so they may interact with the consumer and use their valuable data to influence their buying choices. These digital marketing strategies used together enable to provide of brand information to people seeking goods or services. The sector that neglects these digital marketing techniques might be losing chances to interact with these consumers.

Literature review

Mataram et al., (2021) focused on Ashiyana Home Stay in Coorg and employed observation and interviews to get primary data. India as a whole needs another 125000 hotel rooms soon to meet the rising demand and plugging that shortage of rooms are guest houses, smaller hotels, bed and breakfast accommodation and in places such Coorg planter's bungalows that offer not just rooms but also butler service, local delicacies and a bit more. A home stay provides visitor solitude and lets kids play about; additionally, these houses have tales to tell, operated by the family who have inherited the hospitality and culture.

Yani et al., (2022) targeted at evaluating the success of the DTPC programs in Kerala and also the organizational structure and functioning of DTPCs in Kerala and reviewed the tourist marketing in India and overseas from socio-cultural, financial, and environmental perspectives, the advantages of DTPCs' initiatives in Kerala The research also examined the identification and execution of DTPC programs meant to boost tourism in Kerala. DTPC mostly concentrates on tourism promotion activities like marketing of local products through private/public participation, improvement of quality and evolving procedure for certification of tourism products, improvement of signages and sanitation, heritage conservation and preservation, coordination of tourism clubs, creation of tourism awareness and preparation of host community, information dissemination and local infrastructure building with the cooperation of local bodies. The government of India has taken concerned steps in the promotion and development of tourism industry at national, regional and local levels.

Dixit (2019) investigate how the tourist sector in Kerala affected regional and socioeconomic development. The study found out that well knit transportation facilities, hotel facilities, back waters of Kerala, generation of employment opportunities, alleviation of poverty, boat race in back waters has significant influence in Kerala tourism and also found out that provision of amenities and services, provision of tourist information, keeping uniqueness of Kerala landscape, Natural Diversity, hospitality, tourism awareness, ayurvedic hospitals and treatment, pilgrimage tourism, tourism infrastructure, advertisements, festival participation, aggressive media play act as major interventions in Kerala tourism.

Aiming to understand the function of promotional agencies in the growth of hill tourist destinations in Kryukova et al. (2021) carried out research to evaluate the accessibility and amenities, the socio-cultural, economic and environmental effect of hill tourism in Kerala. The investigation found that there were missing adequate motor able road networks, medical and leisure facilities, and above all appropriate public lighting systems, which will be regarded as emblems of civilized society. It is revealed that publicity of tourism products, working of Tourist Information Counters, sightseeing packages, facilities for adventure activities, safety and security, maintenance of law and order and the general environment at the destination are satisfactory and also found out that Kerala is a pioneer State in India which markets its natural beauty. It comes to light that there is a decent system of transportation, good lodging facilities, high-quality food and drink supplies, pure drinking water and decent sanitation, banks and retail centres.

Another research examined the expansion of the tourist sector in Kanyakumari district and its impact on social and economic progress. The research revealed that the Kanyakumari district tourist business has expanded dramatically over the years because to the special natural and scenic beauty with which it has been blessed as well as its historic significance in the life of the country. The research revealed that while the Kanyakumari area has a bad record in terms of industrial development, the always expanding tourist sector has corrected some of its shortcomings.

2013's Anitha R. in a piece on Outbound Business Travel: An Emerging Trend Among Pharma Companies reminded out that the main instruments used for product marketing are medical representatives. Usually, companies provide them outbound incentives trip to fulfil their aims and inspire their field troops. Strong internal and external rivalry among and between firms is created by outbound tourism. Corporate travel brokers, Airlines, hotels, guide services have all been very important in the marketing of outbound trip, capturing bulk business. Along with an outbound trip as a creative package, the sales team is working toward sales objectives and will gain monetary rewards as well. For their growth as well as advantages to the business, it is also regarded as a prominent one for marketing executive.

To find patient's view and expectations of service quality at one specialized hospital for medical rehabilitation, empirical research on service quality and customer satisfaction in the health tourism sector was undertaken. In order to determine the service quality and customer satisfaction in the health tourism sector, the SERVQUAL questionnaire was given utilizing criteria like dependability, responsiveness, assurance, empathy, accessibility, service quality to find out. According to the research, patients' expectations do in fact differ from their impressions of the quality of the services. Higher degree of service quality patients have also been seen to be more devoted to the company offering medical treatments (Lacarcel & Huete, 2023).

In a 2016 exploration study on customer satisfaction of Ayurvedic Tourists: A Special Reference to Ayurvedic Centers in South Kerala Rathiha Edwin and Nishad concluded that the local government can provide an ideal platform and infrastructure facilities, policy and planning procedures to maximize the benefit of Ayurveda for the local communities and to ensure the satisfaction level in respects to the treatment services offered. Ayurveda oriented medical tourism marketing efforts along with local economics coupled with public private –local government collaborations may greatly help the medical tourism industry to expand (Nofal et al., 2020).

Aiming at additionally analysing how long the visitors have been practicing yoga and the effects of yoga on their life, Warmayana (2018) did a research to pinpoint the elements that improve Kerala's appropriateness for yoga practices. According to the study, the main reason Kerala is suitable for yoga practice is a conventional system of yoga being used there; also, two other factors influence tourists' choice of Kerala as their preferred travel destination: early start of yoga practice and more than one-5 years of practice. The research ends by saying that awareness initiatives, real yoga centers, qualified trainers will allow yoga tourism to help destination community of Kerala.

Sentosa (2023) tried in a research to investigate the many facets on tourist growth in the Alappuzha district. The research showed that tourist expenditure offers solid evidence for the revenue and job producing potential of the tourism sector in Alappuzha and that it has opened a window of advancement to the local populations in many heretofore underappreciated sites in the area. The study came to the conclusion with the observation that Alappuzha has been facing several difficulties in the very early phases of tourism development and the necessity of the hour is that all stakeholders and the public should go hand-in-hand by using the ideas of responsible tourism to make Alappuzha the beloved center of tourism in Kerala.

Del Vecchio et al. (2023) investigated Kerala's community intervention policies related to ecotourism The study revealed that there was no significant relationship between destination quality and sustainability and the reverse relationship between destination quality and sustainability also showed no significant relation in the context of CBE destinations of Kerala and also revealed that there is the difference of opinion among new visitors and repeated visitors with regard on destination quality. Although the Governance and Eco-development dimensions of CIS are helping DQ, the Commercial dimension of CIS was not contributing towards DQ. It was observed that there is no notable difference of opinion among the stakeholders regarding various CIS operationalized in ecotourism destinations.

Methodology

Digital marketing is one transformative tool used globally in tourism promotion with great importance for research. Often referred to as "God's Own Country," Kerala's tourism industry generates a significant economic contribution—with around 5000 million USD expected in 2022. Targeted online marketing, search engine optimization (SEO), and social media channels have helped firms in the tourism sector adequately reach a global audience. Still under discussion, however, is how much digital marketing initiatives affect tourist engagement and business growth in Kerala. This article tries to assess how digital marketing influences the tourism industry in Kerala.

The study's final results will demonstrate that the organization's firm conviction in providing training will undoubtedly result in staff retention. The firm used numerous ways to retain staff, with training playing a significant part in retention efforts. The employer's viewpoint on seeing a person as an asset and thus providing training to workers will be evident in the research. The research study demonstrates that investing in an employee yields reciprocal benefits. The research study will demonstrate that organizations prioritizing staff training will be seen as desirable employers. The study ultimately indicates that employer-provided training fosters a sense of belonging and establishes a distinctive competitive advantage.

The subject of the current research comprises middle-level personnel employed in selected Tourism companies in Kerala.

Aim of the research: To assess the impact of digital marketing on the growth and performance of the tourism industry in Kerala, India.

Hypothesis H: Digital marketing significantly increases tourist inflow to Kerala.

Fifty-five respondents in all were covered by this study.

Table 1. Demographic information of respondents (Source: Author's compilation)

Item	Contents	No: of samples
Gender	Male	36
	Female	19
Age	18-30	41
	31-54	14
Job position	Tourist company employees	7
	Tourism consumers	48

The researcher used a preset questionnaire for data gathering. Since the questionnaire embodies the study's goals, it has been constructed by the researcher to accurately represent these aims.

Results

Demographic results

Table 1 explains the Demographic Information of Respondents offers a general picture of the features of the survey subjects. There are 55 responders total—36 men and 19 women—indicating a greater male involvement rate in the samples. While 14 people fell within the 31-54 age range, indicating that younger people are increasingly involved in tourism-related activities, most of the respondents—41 people—are between the 18-30 age range. About employment, the majority (48 respondents) are consumers of tourism; just 7 respondents are workers of tourist companies, therefore demonstrating a higher representation of tourists in the research. This demographic distribution illustrates how digital marketing affects certain segments of the tourist sector in Kerala.

Descriptive statistical analysis

Table 2 Descriptive statistical analysis (Source: Field data)

	N	Mean	Std. Deviation
I frequently use digital platforms (social media, websites, search engines) to plan my trips.	55	3.500	1.042
Social media marketing influences my decision when selecting a travel destination.	55	3.366	1.299
Online advertisements (Google Ads, Facebook Ads) make me aware of new travel destinations.	55	3.833	0.746
SEO (Search Engine Optimization) affects my likelihood of choosing a tourism service.	55	3.400	1.191
Travel blogs and influencer reviews help me decide where to visit in Kerala.	55	3.733	1.172
Email marketing from travel companies encourages me to consider their services.	55	3.600	1.069
Online videos (YouTube, Instagram Reels) impact my travel choices.	55	3.666	0.994
Valid N (listwise)	55		

Based on 55 respondents, Table 2 offers a descriptive statistical study of important digital marketing elements affecting tourism in Kerala. With values ranging from 3.3667 to 3.8333, the mean scores show the general agreement level among participants and imply a modest to strong influence of digital marketing methods on travel choices. Online ads (Google Ads, Facebook Ads) show the highest meaning (3.8333), suggesting their great influence in increasing knowledge of fresh tourist locations. Travel blogs and influencer reviews (3.7333) and online videos (3.6667) also exhibit significant impact, stressing the increasing relevance of user-generated material and visual interaction. With a modest impact, SEO (3.4000), social media marketing (3.3667), and email marketing (3.6000) imply they are successful, but their influence may vary based on user preferences. With social media marketing displaying the biggest variability (1.29943), indicating diverse views about its efficacy, the standard deviations—which range from 0.74664 to 1.29943—indicate different degrees of agreement among respondents. These results highlight generally how important digital methods such as online ads, influencer content, and video marketing are influencing travel choices in Kerala.

Regression analysis

Regression analysis has been conducted to prove the hypothesis **H1**- Digital marketing significantly increases tourist inflow to Kerala.

Table 3. Model Summary (Result analysis)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.751[a]	.562	.442	.8
a. Predictors: (Constant), I frequently use digital platforms (social media, websites, search engines) to plan my trips. Social media marketing influences my decision when selecting a travel destination. Online advertisements (Google Ads, Facebook Ads) make me aware of new travel destinations. SEO (Search Engine Optimization) affects my likelihood of choosing a tourism service. Travel blogs and influencer reviews help me decide where to visit in Kerala. Email marketing from travel companies encourages me to consider their services. Online videos (YouTube, Instagram Reels) impact my travel choices.				
b. Dependent Variable: The use of digital marketing has increased the number of tourists visiting Kerala.				

Table 4. ANOVA (Result analysis)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.930	6	3.655	4.720	.002[b]
	Residual	17.035	22	.774		
	Total	38.966	28			
a. Dependent Variable: The use of digital marketing has increased the number of tourists visiting Kerala.						
b. Predictors: (Constant), I frequently use digital platforms (social media, websites, search engines) to plan my trips. Social media marketing influences my decision when selecting a travel destination. Online advertisements (Google Ads, Facebook Ads) make me aware of new travel destinations. SEO (Search Engine Optimization) affects my likelihood of choosing a tourism service. Travel blogs and influencer reviews help me decide where to visit in Kerala. Email marketing from travel companies encourages me to consider their services. Online videos (YouTube, Instagram Reels) impact my travel choices.						

The regression analysis findings shown in Tables 3 and 4 confirm the hypothesis H1: Digital marketing greatly boosts visitor influx to Kerala. Indicating a significant association, the model summary (Table 3) reveals that the regression model explains 56.3% ($R^2 = 0.563$) of the variation in visitor inflow resulting from digital marketing methods. The modified R^2 value (0.444) indicates that digital marketing continues to be a significant predictor of more visitor visits even after considering model complexity. With an F-value of 4.720 and a p-value of 0.002 (< 0.05), the ANOVA table (Table 4) validates the statistical relevance of the model using the independent variables: social media marketing, online ads, SEO, travel blogs, influencer reviews, email marketing, and online videos collectively have a significant impact on tourism inflow. With a standard error of 0.87995, projections show somewhat modest fluctuation. These results show how important digital marketing is in drawing visitors to Kerala; with online ads, influencer material, and social media interaction influencing visitor choices, digital marketing is very important.

Conclusions

1. Tourist flow to Kerala is largely influenced by digital marketing. According to the regression study ($R^2 = 0.563$, $p = 0.003$), many digital marketing techniques—including social media marketing, SEO, online ads, and influencer content—together contribute significantly in drawing visitors.
2. Among the best digital marketing techniques are online ads and influencer material. The descriptive data show that platforms like Google Ads, Facebook Ads, travel blogs, and influencer reviews have better mean scores, thereby suggesting their great impact on travel decisions.
3. The predictive model verifies that a significant amount of travel increase may be explained by digital marketing policies. With an adjusted R^2 of 0.444 and a statistically significant F-value (4.720, $p = 0.003$), the results underline how important digital platforms are in determining consumer behavior and raising travel demand in Kerala.

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Nanayakkara Nanayakkara Uswaththa Liyanage Kasuni Kalhari. ROLE OF CUSTOMER RELATIONS IN THE SUCCESS OF SRI LANKA FOOD PRODUCER BRANDS.

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Abstract

Research relevance: In the food industry, it is especially important to analyse the impact of relation management elements on the brand, as this industry has a number of unique features that significantly affect customer perception and loyalty. The food industry is closely connected to the daily lives of consumers, and the quality of products and services directly affects the health and well-being of customers. In a highly competitive environment and constantly changing consumer preferences, companies must pay special attention to customer relations to remain competitive and maintain a positive brand image.

Research goal: To identify the elements of customer relations impacting the brand success in Sri Lanka food producing companies.

Research methods: The research methods used in this research are mixed, as they include both qualitative and quantitative approaches. The qualitative part of the study consisted of a literature review, which allowed to study the theoretical aspects of customer relationship management and identify key elements that can influence brand success. The quantitative part of the study was represented by a survey, which allowed to collect data on the perception of various elements of customer relationships and their impact on brand success.

Main findings: The results showed that the relationship management elements of "people" and "value" had the greatest impact on the success of the Ceylon Biscuits Limited brand, demonstrating significant positive correlations with brand perception.

Keywords: Sri Lanka; Food producer; Brand; Success; Customer relations.

Introduction

In the food industry, it is especially important to analyse the impact of relation management elements on the brand, as this industry has a number of unique features that significantly affect customer perception and loyalty. The food industry is closely connected to the daily lives of consumers, and the quality of products and services directly affects the health and well-being of customers. One of the reasons for the importance of relation analysis is the high sensitivity of consumers to product quality and service levels. Chiang (2020) therefore, companies in the food industry must closely monitor customer reviews, promptly respond to complaints and actively work to improve the quality of their services to minimize the risks of losing trust. In addition, the food industry is characterized by a high degree of repeat purchases, since consumers regularly purchase food products. This creates opportunities to build sustainable long-term relations with customers, but at the same time requires constant analysis of the factors that influence their satisfaction and loyalty. Quoquab et al. (2019) using customer retention strategies and loyalty programs helps a company stand out from the competition, increasing the lifetime value of a customer. This is especially important in conditions where attracting new customers is much more expensive than retaining existing ones. The influence of trends and changes in consumer preferences, such as the transition to healthy eating, preference for organic products or ethical consumption, also plays an important role. Khan et al. (2020) the aforementioned presents the topicality of the topic. This research study aims to identify the elements of customer relations impacting the brand success in Sri Lanka food producing companies. Accordingly, the author states the research hypothesis that people and culture are the elements of customer relations impacting the brand success in Sri Lanka food producing companies.

The research methods used in this research are mixed, as they include both qualitative and quantitative approaches. The qualitative part of the study consisted of a literature review, which allowed to study the theoretical aspects of customer relationship management and identify key elements that can influence brand success. The quantitative part of the study was represented by a survey, which allowed to collect data on the perception of various elements of customer relationships and their impact on brand success.

The results showed that the relationship management elements of "people" and "value" had the greatest impact on the success of the Ceylon Biscuits Limited brand, demonstrating significant positive correlations with brand perception.

Literature Review

Every business grows thanks to the development of relations between the seller and the buyer. Selling to an existing client with whom you have already built a trusting relation is faster and cheaper than finding a new one. Therefore, a business that focuses on one-time sales is more vulnerable compared to competitors who invest in marketing and strengthening long-term relations with clients. An effective business works with LTV (Lifetime Value) - the time during which the client brings profit, and loyalty. Relations with clients have ceased to be just a transactional process. Denga et al. (2022) They have turned into a strategic element that determines how successfully a company can retain its audience, develop and adapt to changing market requirements. Firmansyah and Purnamasari (2023) examine the most significant and influential aspects that form the basis of effective customer relations.

Understanding the customer's needs is the cornerstone of building relations based on mutual trust and benefit. Hilton et al. (2020) emphasize perhaps most significant stage of customer engagement is to carefully identify and analyze their needs. It is important not only to listen, but also to explore, asking the right questions and delving into detail. This process requires not only general information about the goods or services, but also an understanding of the context in which the customer intends to use them. Khennouche et al. (2024) describes important aspects to effectively understanding customer needs: Before offering a solution, a company should thoroughly research the industry it operates in and analyze customer preferences and trends. This will help to better understand which products or services can truly add value to customers. Schons et al. (2018) shows, that customer-first approach allows to create an offer that precisely meets their expectations. In addition, the customer needs can change over time. A company must be prepared to adapt and change its products or services to meet new requirements. Understanding customers means not only knowing their current needs, but also understanding their deeper values, motivations, and goals. Röser (2024) shows ultimately, understanding customer needs is more than just analyzing the market and requirements. It is a look into the future that allows a company to adapt, innovate, and create products and services that truly solve problems and bring value to customers. Tardieu et al. (2020) shows, that one of the main elements of personalizing the approach is the understanding that each customer is unique. This is not just taking into account their demographic data, but also a deep understanding of their needs, passions, and motivations. By analysing data about previous purchases and behaviour, customer research, companies can provide personalized recommendations and tips. Nguyen & Hsu (2022) shows, that in today’s information- and option-rich business environment, building long-term, trusting relations with customers is a top priority. Companies that adhere to these principles have the opportunity to not only strengthen their reputation, but also establish strong connections with their audience. Ali et al. (2021) shows, that customers expect complete and accurate information about products, services, prices, and any terms and conditions associated with them. Rust et al. (2021) describes, that lack of response or delays can lead to dissatisfaction and mistrust. Closing a sale is just one stage of interaction between a company and a customer (Raza et al., 2020). In today's business reality, a company's success is determined not only by how successfully it sells products or services, but also by how well it provides support after the transaction is completed. After-sales support is an investment in long-term success. It strengthens the bond with customers, demonstrates care and willingness to help, which leads to satisfaction and loyalty (Javed et al., 2020). Companies that build relations not only on the sale, but also on the service and support, create the foundation for a stable and successful business. Zhang et al. (2024) explored positive customer experience extends far beyond the quality of products and services – it includes every stage of interaction with a company, from the first contact to the last transaction. A company should strive to not only provide a solution, but also to meet the unique needs of each customer (Klink et al., 2020). It goes without saying that the quality of products and services is the foundation of a positive experience (Olsen & Pracejus, 2020). Understanding customer needs, personalization of the approach, openness and transparency, after-sales support, and creating a positive experience are integral elements that contribute to the establishment of trusting and long-term relations (Khan et al., 2020). To be successful in all competitive conditions, companies must be in constant study of their customers (Migdadi, 2020). Communication with customers is more than a business model strategy or a technology solution (Guerola-Navarro et al., 2022). The mass of customer data is new technology tools that can lead to increased competitive advantages. In addition, the marketing advantage of small companies over large companies is the relation between the entrepreneur and customers. Small companies have a limited customer base and customers are usually limited by the possibilities of local markets.

This leads to a way of communication between the company and customers, therefore, today entrepreneurs often know customers, which increases close relations leading to profits, customer loyalty and higher customer satisfaction (Migdadi, 2020). In addition, the flexibility of small companies in quickly responding to customers is another aspect that contributes to improving the relation between entrepreneurs and customers. Easy access to market information is the main advantage of small companies; Companies require the combination of market information, improved market technologies and improved management to meet new challenges in the markets (Varadarajan, 2020). As a combination of individuals, procedures and technologies, the focus is on developing and improving customer relations to gain a clear understanding of the organization's customers and a consistent relation management strategy (Guerola-Navarro et al., 2022). Given that companies deal with customers for a large part of their daily business activities, in order to develop and survive in economic competition, they must focus on the customer and strengthen their relations with customers for products and services, much more than ever. As a result, along with advances in technology and information technology, being in intense competition with their competitors, companies must plan to provide and improve customer relation management, as well as expand their markets in a timely manner (Mariani & Fosso Wamba, 2020). Therefore, to succeed in the future, organizations and companies require a deeper understanding of customer needs, which will be possible by developing an accurate and organized plan and mobilizing resources to avoid losing customers, winning back old customers (Rathi & Jain, 2023). Retention of customers will be possible by delivering them satisfaction (Alshurideh, 2022). Because when customers are satisfied, they often make purchases in large quantities and bring more profit to the company. By establishing sustainable relations with customers, companies can offer them more and more services, which is considered responsive to customer needs. Relations and customer relation management have a significant impact on the success of a brand, helping to strengthen it in the market and create a sustainable competitive advantage (Natiqa et al., 2022). One of the key effects of CRM is increased customer satisfaction and loyalty. When a company deeply understands the needs and preferences of its customers, it is able to offer high-quality products and services that meet their expectations. It is cheaper to retain customers than to attract new ones, so strategies aimed at retaining and increasing loyalty help reduce marketing costs and increase revenue (Migdadi, 2020). Loyal customers tend to be more profitable because they make purchases more often and with a higher average check. Thus, the lifetime value of the customer increases, which has a positive effect on the overall financial stability of the company. One of the significant benefits is the reduced risk of losing customers. Relation management systems allow the company to promptly respond to negative signals, such as a decrease in purchases or the emergence of complaints, which helps prevent customer churn (Baashar et al., 2020). Regular interaction with customers, personalized offers and high-quality after-sales service creates conditions for maintaining positive relations even if problems arise. This is especially important in competitive industries where customers can easily change service providers. In addition, customer relation management plays an important role in strengthening the brand's reputation (Freeb, 2022).

Methodology

In the food industry, it is especially important to analyse the impact of relation management elements on the brand, as this industry has a number of unique features that significantly affect customer perception and loyalty. The influence of trends and changes in consumer preferences, such as the transition to healthy eating, preference for organic products or ethical consumption, also plays an important role. Companies must be able to anticipate these changes and adapt to them in order to remain relevant to their audience (Khan et al., 2020). Analysing customer interaction data allows you to promptly identify new needs and offer relevant products and services, thereby maintaining interest in the brand. The author of the paper created a customer survey for the food company Ceylon Biscuits Limited, which was used as a pilot for further research (Lubis & Wardana, 2020). The survey was aimed at consumers and collected data from 72 respondents. The questionnaire was distributed through the company's marketing managers, who regularly conduct various surveys and have experience in working with customers. The questionnaire was given directly to the company's customers, including representatives of purchasing organizations such as stores, chains and distributors. The questionnaire had two parts, and the first part concerned the demographic data of the respondents. This part of the survey clarified the following aspects: type of customer (e.g. retail store, distributor or chain representative), length of cooperation with the brand, respondent's involvement in the purchasing decision-making process, position held in the company, and how long the respondent has been directly involved in working with the brand. The second part of the questionnaire was devoted to customer relation elements to gain a deeper understanding of which aspects of the interaction matter most to consumers and how they affect their perception of the company. Relation elements are interpreted differently depending on the specifics of the company and the industry, so it is important to consider different approaches to defining and managing them. There are also approaches that emphasize customer analytics. This may include a comprehensive needs analysis, customer segmentation, and creditworthiness assessment. Another approach includes the main components that form successful and long-term relations. Trust is the fundamental element on which all subsequent aspects are built, since customers must be confident in the reliability and honesty of the company (Ma, 2017). Trust is the foundation of commitment, where customers are willing to maintain long-term relations. relation with the brand and make choices in its favour. Customer satisfaction measures the extent to which the experience meets their expectations; high levels of satisfaction further strengthen trust and commitment. The ultimate goal of the relation is loyalty, which is expressed in repeat purchases, brand preference over competitors, and recommendations to others. In developing the questionnaire, the author chose the third type of segmentation of relation elements, since it turned out to be the most adequate and comprehensive (Smaliukiene et al., 2020). This approach includes the following key elements: people, customers, organization, culture, relation management process, knowledge management, value and information technology (IT). This type of segmentation covers both human and technological aspects of relation management, which makes it the most balanced and suitable for in-depth analysis (Kamrul, 2015). First, the “people” element reflects the importance of the human factor in CRM, since it is employees who interact with customers and create their experience. Including customers as a separate element emphasizes the significance of understanding their needs and preferences, which is the central task of CRM. The "organization" component describes the internal structure and processes of the company, which should be built in such a way as to support effective relation management. Culture plays a key role in shaping the company's approach to customers, defining the values and norms that guide the behaviour of employees. The relation management process includes consistent actions and strategies aimed at establishing and maintaining relations with customers, while knowledge management covers the collection, storage and use of customer information to improve the quality of service. The value element focuses on creating and delivering the benefit that is important to the customer, while information technology (IT) supports all of these processes by automating interactions and simplifying data management. The author found this approach to be the most appropriate because it includes a wide range of factors that influence customer relation management and covers human, organizational, cultural, and technological aspects. This multidimensional approach allows for a more comprehensive analysis of customer relations and the development of effective improvement strategies.

Results

Among the respondents who took part in the survey, the distribution by the type of organization was as follows: 28 people represented retail stores, 23 people represented distributors, and 21 people represented chain stores. Thus, there was a fairly even distribution among the survey participants, which allows us to obtain representative data on different types of customers. Data show that the participants included both new customers and those who have a longer experience of interacting with the brand. In terms of role in decision making, 21 respondents indicated that they independently make decisions on product purchases, 37 people reported that they are partially involved in the decision-making process, and 14 respondents do not participate in decision making. The distribution by positions in the company showed that 43 respondents hold the position of purchasing manager, 23 people are sales managers, and only 6 respondents hold the position of the owner or director of the company. This indicates the predominance of specialists directly involved in the purchasing process. The involvement in working with the Ceylon Biscuits Limited brand was distributed as follows: 9 respondents were involved for less than 6 months, 19 - from 6 months to 1 year, 26 - from 1 to 3 years, and 18 people - more than 3 years. The evaluation of factors contributing to the success of the brand Ceylon Biscuits Limited based on the given ratings is as follows: The average score of product quality of 4.12 indicates that customers generally perceive the quality of Ceylon Biscuits' products to be high. This suggests that the brand's offerings meet consumer expectations. With a score of 4.37, brand reputation is seen as one of the strongest factors for Ceylon Biscuits. The score of service level 3.81 suggests that while the service level is considered satisfactory, it is the weakest of the three evaluated factors. There is potential for improvement in customer service, responsiveness, or other aspects of service delivery to further enhance customer experience and satisfaction (Figure 1).

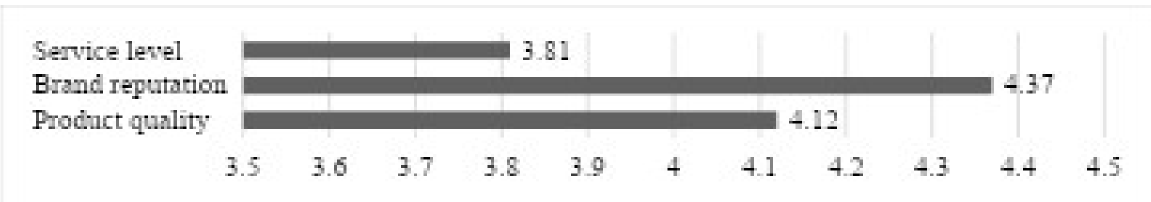

Fig. 1. Assessment of the different areas of brand success (Source: author's created)

The analysis of the ratings for the relationship management elements reveals that "People" (3.96) and "Value" (3.88) are perceived as the most important factors for customer value creation and brand success, indicating that personal interactions and delivering quality products or services play a critical role.

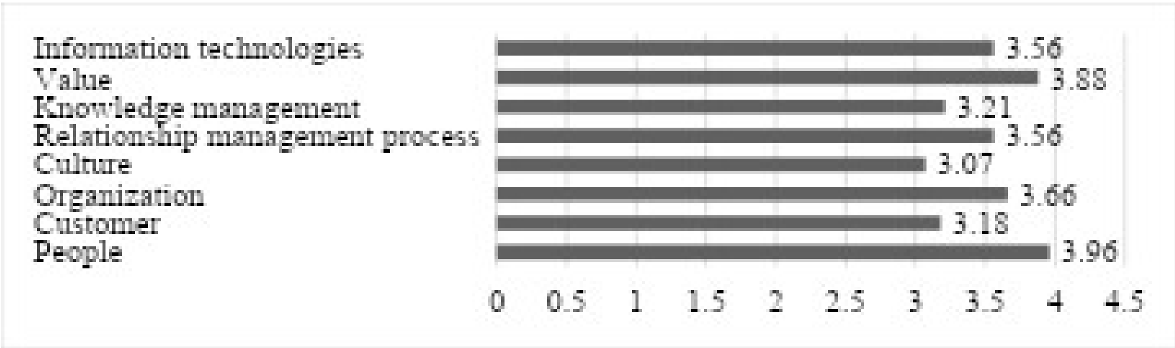

Fig. 2. Assessment of the different elements of customer relations (Source: author's created)

processes and technological support are also valued, contributing significantly to customer satisfaction. In contrast, elements like "Customer" (3.18), "Culture" (3.07), and "Knowledge management" (3.21) received lower ratings, indicating a lesser, though still relevant, impact on value creation and brand success. The findings suggest an opportunity to enhance customer-centric approaches, cultivate a stronger customer-focused culture, and better utilize knowledge management to fully leverage customer data and insights for improved performance (Figure 2). The author calculated averages for each customer relationship segment, as well as an average for overall brand success. The author also conducted a correlation analysis to determine how much the different relationship elements contributed to overall brand success. (Table 1) The correlation analysis showed that of the three segments that were identified in the previous analysis as being most important for brand success ("People," "Value," and "Organization"), only two actually demonstrated a significant correlation with brand success. "People" demonstrated a correlation coefficient of 0.394 at a significance level of 0.011, indicating a moderately positive correlation that is statistically significant and confirms the influence of the human factor on brand success. "Value" demonstrated an even higher correlation with a coefficient of 0.516 at a significance level of 0.000, indicating a strong positive relationship.

Table 1. Correlation analysis (Source: author's created)

			Brand success
Spearman's rho	People	Correlation Coefficient	.394**
		Sig. (2-tailed)	.011
		N	72
	Customer	Correlation Coefficient	.216
		Sig. (2-tailed)	.633
		N	72
	Organization	Correlation Coefficient	.326
		Sig. (2-tailed)	.303
		N	72
	Culture	Correlation Coefficient	.039
		Sig. (2-tailed)	.460
		N	72
	Relationship management process	Correlation Coefficient	.022
		Sig. (2-tailed)	.158
		N	72
	Knowledge management	Correlation Coefficient	.075
		Sig. (2-tailed)	.543
		N	72
	Value	Correlation Coefficient	.516**
		Sig. (2-tailed)	.000
		N	72
	Information technologies	Correlation Coefficient	.287
		Sig. (2-tailed)	.573
		N	72

However, "Organization" did not demonstrate a significant correlation with a correlation coefficient of 0.326 and a significance level of 0.303. This means that despite its importance in customer perceptions, the actual influence of organizational aspects on brand success was less pronounced compared to the other elements. The remaining items, such as "Customer," "Culture," "Relationship management process," "Knowledge Management," and "Information technologies," showed weaker correlations and were not statistically significant, confirming their smaller contribution to overall brand success in this study.

Conclusions

The results of this study partially confirmed the hypothesis that the elements of customer relationship management that influence brand success to the greatest extent are "people" and "culture." The correlation analysis showed that the "people" factor does have a significant impact on brand success, with a moderate positive correlation, confirming the importance of human interaction and employee professionalism. However, the "culture" factor did not show a significant correlation, indicating a lesser influence of corporate culture on the perception of brand success. At the same time, the "value" element was the most significant, showing a strong positive correlation with brand success, emphasizing the importance of creating and delivering quality products and services. Thus, the hypothesis was partially confirmed: the influence of "people" on brand success is obvious, while "culture" requires a more in-depth study and, possibly, the inclusion of additional factors in the analysis. The practical application of the research results is the possibility of using data to improve customer relation management at

Ceylon Biscuits Limited. Focusing on developing competencies and supporting customer interactions could be an important step in strengthening the brand's position. Theoretically, the results provide a basis for further research in the area of customer relationship management, demonstrating the importance of "people" and "value" within the food industry. These findings could also serve as a basis for future larger-scale studies involving other well-known food brands. Expanding the study would allow for more generalizable findings, confirming or rejecting the findings in other companies.

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Sneha Ganeshram. INFLUENCE OF CYBERSECURITY MEASURES ON CONSUMER TRUST AND LOYALTY IN DIGITAL MARKETING IN INDIA

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Abstract

Research relevance: In India's rapidly growing digital economy, cybersecurity has become a key factor shaping consumer perception and behavior on digital marketing platforms. Rising data breaches and privacy concerns have elevated the importance of user trust. Cybersecurity is now seen not only as a technical safeguard but also as a strategic element for retaining consumers. Despite its growing significance, there is limited research on how cybersecurity directly influences consumer trust and loyalty in the Indian context. This study addresses that gap.

Research goal: The study aims to assess the impact of cybersecurity measures on consumer trust and loyalty toward digital marketing platforms in India. It explores how data protection, privacy practices, and incident response influence consumer engagement.

Research methods: A mixed-methods approach is used. Quantitative data from a structured online survey (50 participants across India) is combined with qualitative insights from an interview with a digital marketing professional. Analytical methods include regression, factor analysis, and thematic evaluation.

Main findings: Results show a strong positive link between effective cybersecurity and consumer trust, which significantly affects loyalty. Transparent data protection policies and visible cybersecurity efforts enhance consumer confidence and repeat usage. The study provides practical recommendations for strengthening user trust via improved cybersecurity.

Keywords: Cybersecurity; Consumer trust; Digital marketing; Loyalty; India.

Introduction

As the digital economy continues to expand, trust has become a crucial element in shaping consumer relationships with online platforms. Digital marketing platforms play a central role in customer outreach and data-driven engagement, which places them under increasing scrutiny regarding how they handle user information. In India, where digital adoption is accelerating rapidly, the importance of cybersecurity has come to the forefront, especially in influencing how consumers perceive and interact with these platforms.

The growing number of cyber threats and incidents involving data misuse has led consumers to become more aware of and sensitive to online security issues. Consequently, cybersecurity is no longer viewed as merely a technical requirement; it is now a strategic tool that affects consumer trust and loyalty. When digital platforms prioritize robust security protocols and transparent data practices, users are more likely to develop confidence in their services. This trust is essential in fostering customer loyalty, which encompasses ongoing usage, repeat interactions, and a greater willingness to recommend the platform to others.

This article focuses on digital marketing platforms in India and explores how cybersecurity measures influence consumer trust and loyalty. The subject of this study revolves around the relationship between cybersecurity strategies and consumer behaviour in the digital space. The primary aim is to analyse the impact of cybersecurity measures on consumer trust and loyalty toward digital marketing platforms within the Indian context.

To achieve this objective, a comprehensive literature review was conducted to understand the theoretical underpinnings of cybersecurity, trust, and loyalty in the digital environment. The study identifies and categorizes key cybersecurity strategies adopted by Indian digital marketing platforms, such as certifications, encryption protocols, privacy policies, and user data handling practices. A structured consumer survey was designed and administered to capture perceptions of cybersecurity and levels of trust in various platforms, while also assessing loyalty indicators such as repeat usage, customer retention, and willingness to recommend.

In parallel, in-depth interviews with digital marketing professionals were conducted to gain insights into the strategic motivations behind cybersecurity implementation and its connection to customer engagement. The study also examined consumer purchasing decisions considering cybersecurity perceptions and compared loyalty levels across platforms with differing levels of cybersecurity transparency. These tasks enabled a thorough analysis of which practices most effectively influence consumer trust and loyalty.

The research was guided by several hypotheses: that a strong cybersecurity framework (e.g., ISO, PCI-DSS) positively influences consumer trust; that higher trust levels contribute to greater loyalty in India's digital marketing sector; that cybersecurity initiatives impact purchasing behaviour and long-term brand commitment; and that trust in cybersecurity plays a role in consumers' willingness to engage with digital marketing efforts.

Correspondingly, the study sought to answer key research questions, such as how cybersecurity measures influence trust, what relationship exists between trust and loyalty, which cybersecurity strategies most effectively enhance loyalty, and how consumer perceptions of cybersecurity affect their online purchasing decisions.

Adopting a mixed-methods approach, the research integrated both quantitative and qualitative methodologies. Quantitative data were collected through an online survey distributed to participants representing diverse demographic backgrounds across India, using Google Forms as the data collection tool. The survey assessed consumer attitudes toward cybersecurity, perceived trust, and loyalty behaviours. Stratified random sampling was employed to ensure broad demographic representation. The qualitative component involved a semi-structured interview with an industry expert, providing depth to the understanding of practical cybersecurity applications.

Data were analysed using various methods: descriptive and frequency analysis, reliability analysis, correlation analysis, regression analysis for quantitative data, and thematic transcription analysis for qualitative insights. This combination enabled a robust understanding of consumer behaviour and platform strategies.

The analysis revealed that specific cybersecurity perceptions significantly impact customer loyalty to digital marketing platforms. In particular, the presence of secure-looking websites such as HTTPS indicators and padlock symbols, clear and accessible privacy policies, and user sensitivity to insecure payment pages emerged as the most influential factors. These findings underscore the need for visible, transparent, and reassuring cybersecurity practices. While features like two-factor authentication and general feelings of safety were positively associated with loyalty, their lesser statistical significance suggests they play a more supportive role in influencing consumer behaviour.

Ultimately, this research provides actionable insights for digital marketing platforms in India. By aligning cybersecurity strategies with consumer expectations and communicating these measures effectively, platforms can enhance trust, strengthen brand loyalty, and maintain a competitive edge in India's rapidly evolving digital landscape.

Literature Review

The evolution of the digital economy has brought about a paradigm shift in how businesses connect with consumers, particularly through digital marketing platforms. In India, where digital adoption has surged due to increased smartphone penetration and affordable internet access, digital marketing is not merely a promotional tool but a strategic interface through which brands communicate, collect data, and build consumer relationships. As a result, trust has emerged as a pivotal factor governing consumer interactions with such platforms, with cybersecurity now acting as a critical foundation of that trust.

Digital marketing, which encompasses techniques such as social media outreach, search engine optimization, and personalized advertising, plays a vital role in influencing purchasing behaviour, especially in culturally diverse markets like India. This form of marketing integrates both traditional marketing goals such as satisfying customer needs, and modern methods of reaching a technologically savvy population via platforms like WhatsApp, Instagram, and vernacular content channels (NIIT, 2020; NIELIT, n.d.). With its dynamic nature and massive data dependency, digital marketing becomes particularly vulnerable to cybersecurity threats, thereby introducing risk factors that can affect how consumers perceive these platforms. Digital marketing, rooted in traditional marketing theory, is defined as the strategic process of creating, communicating, and delivering value to customers to satisfy their needs and build lasting relationships (Kotler & Keller, 2016).

Cybersecurity, in this context, refers to the suite of technologies, processes, and measures designed to protect digital information and infrastructure from unauthorized access and cyberattacks. In India, the legal foundation of cybersecurity is established through the Information Technology Act of 2000 and is supplemented by additional compliance standards such as ISO/IEC 27001 and data protection frameworks proposed by CERT-In. Given that digital marketing relies heavily on user data for behavioural targeting and analytics, any compromise of this data through phishing, malware, or breaches can significantly damage a platform’s credibility.

The Indian digital marketing ecosystem has expanded at an unprecedented rate, as reflected in studies that show a growing trend in online retail, influencer-driven campaigns, and real-time data analytics (Anurag & Kaur, 2021). However, this growth also amplifies the exposure to cyber threats. Bunnell (2025) points out that digital marketers face increasing attacks through fake URLs, malicious plugins, and bot traffic—all of which can jeopardize customer information. With platforms storing large volumes of user profiles, transaction histories, and preferences, any laxity in cybersecurity measures could erode user confidence and lead to reputational damage.

The regulatory response in India has been multifaceted, involving institutional mechanisms like the Indian Computer Emergency Response Team (CERT-In), which issues advisories and coordinates incident responses. The presence of guidelines for encryption standards, breach notifications, and regular security audits has become a non-negotiable aspect of digital marketing operations. Yet, regulation alone is insufficient to ensure consumer trust, where user perception becomes crucial.

Consumer trust in digital platforms has been widely studied, with research indicating that trust is influenced not only by the technical robustness of a platform but also by transparency in data handling and ethical behavior (Thaw et al., 2009; Jain & Sinha, 2020). In the Indian context, where consumer decisions are shaped by a mix of social influence, brand heritage, and online reviews, building and sustaining trust requires consistent and visible cybersecurity actions. Trust, in turn, acts as a gateway to long-term brand loyalty, making it essential for digital marketers to communicate their commitment to data protection.

Jain and Sinha (2020) emphasized that consumer trust is not a static metric; it evolves based on the brand’s responsiveness to emerging threats, disclosure of data breaches, and implementation of consumer privacy rights. Moreover, Siddiqui and Gir (2024) argue that integrating reputation mechanisms with security policies enhances consumer faith in digital transactions. Hussain (2025) supports this by showing that platforms that proactively engage in privacy and security innovation tend to cultivate stronger consumer relationships.

Consumer loyalty, meanwhile, is closely tied to trust and satisfaction. In India, loyalty is influenced not only by service quality but also by factors such as emotional connection, local cultural relevance, and user convenience (Kaur et al., 2018; Verma, 2017). Loyalty ecosystems built through mobile wallets and cashback platforms like Paytm or PhonePe further highlight how seamless, secure digital experiences drive continued engagement (Narasimhan & Varadarajan, 2020). As such, cybersecurity plays an indirect but crucial role in sustaining loyalty, when users feel protected they are more inclined to repeatedly interact with a brand.

This interdependence between cybersecurity, trust, and loyalty means that platforms must go beyond compliance and adopt a more consumer-centric view of data protection. Studies show that platforms employing strong encryption, multi-factor authentication, and fraud detection systems are viewed more favorably. Furthermore, when platforms align their cybersecurity strategies with public expectations such as visible privacy policies, responsive customer service during incidents, and consistent updates, consumers reciprocate with continued patronage and advocacy.

Indian consumers are also becoming more aware of their digital rights, with an increasing number expressing concern over how their personal data is used. Kadence International found that digital-savvy consumers in India expect brands to act as custodians of their data, and breaches of that trust can lead to immediate disengagement. Another study explains that even one cybersecurity incident can lead to reduced purchase intentions and a shift to competing platforms perceived to be more secure.

The transparency of a platform's cybersecurity policies further affects user engagement. Platforms that openly communicate about their security posture, explain user data rights, and take swift action after incidents tend to inspire greater loyalty. In contrast, those that operate in opacity and fail to disclose incidents in a timely manner can suffer long-term reputational damage.

From a strategic perspective, companies are increasingly viewing cybersecurity not just as a defensive necessity but as a proactive brand-building tool. Forbes (2025) highlighted that leading digital brands use cybersecurity as a differentiator, especially in competitive markets like India, where consumer trust is hard-earned and easily lost. EY India (2025) noted that in the context of digital payments and marketing ecosystems, regulatory compliance also reduces financial and legal risks, making cybersecurity a strategic imperative for both brand sustainability and growth.

In conclusion, the reviewed literature underscores the inseparability of cybersecurity from consumer trust and loyalty in digital marketing. In a market like India, where the digital space is evolving rapidly and user expectations are becoming more sophisticated, cybersecurity is not just an IT concern—it is a business priority and a core element of customer experience. As such, Indian digital marketing platforms must not only implement robust security measures but also communicate their efforts transparently and ethically to sustain consumer trust and foster long-term loyalty.

Methodology

This study employs a mixed-methods research design, integrating both quantitative and qualitative methodologies to explore the relationship between cybersecurity measures, consumer trust, and loyalty within the Indian digital marketing ecosystem. A combination of primary and secondary data was used to ensure both depth and breadth of understanding.

Data for the quantitative phase was collected using a structured online survey distributed via Google Forms. The questionnaire included multiple Likert-scale items ranging from 1 to 5 to assess respondents' perceptions of cybersecurity effectiveness, their trust in digital marketing platforms, and their degree of loyalty. The survey targeted digital consumers across India, and responses were obtained from 50 participants. A stratified random sampling technique was employed to ensure demographic diversity across variables such as age, gender, income level, region, and occupation.

For the qualitative phase, a semi-structured in-depth interview was conducted with a digital marketing professional experienced in cybersecurity implementation. The objective was to gain practical insights into how businesses apply cybersecurity strategies and how these practices influence consumer perceptions and engagement. The industry expert was selected through purposive sampling to ensure relevant professional expertise.

Following data collection, descriptive and frequency analyses were conducted to summarize demographic variables and key survey responses. This helped identify basic trends related to shopping frequency, trust levels, cybersecurity awareness, and experiences of data breaches. To assess the reliability of grouped items within the survey, such as constructs related to trust and loyalty, internal consistency was measured using Cronbach's Alpha. Relationships between variables were examined using Pearson correlation analysis to evaluate the strength and direction of linear associations, such as between cybersecurity perception and trust, or between trust and loyalty.

To test the research hypotheses, multiple linear regression models were developed. These models evaluated the influence of several independent variables such as perceived security features, trust indicators, and behavioral factors on dependent outcomes like loyalty, purchase intent, and willingness to interact with digital marketing content. This method allowed the study to quantify the impact of individual predictors while controlling others, thus offering a clearer understanding of which cybersecurity-related factors most significantly drive trust and loyalty among consumers.

Overall, the integration of stratified random sampling for the survey and purposive sampling for expert interviews ensured both representativeness and relevance. The chosen methodology effectively enabled the study to address its research questions while maintaining analytical rigor and practical relevance.

Results

Shopping Frequency by Income Level

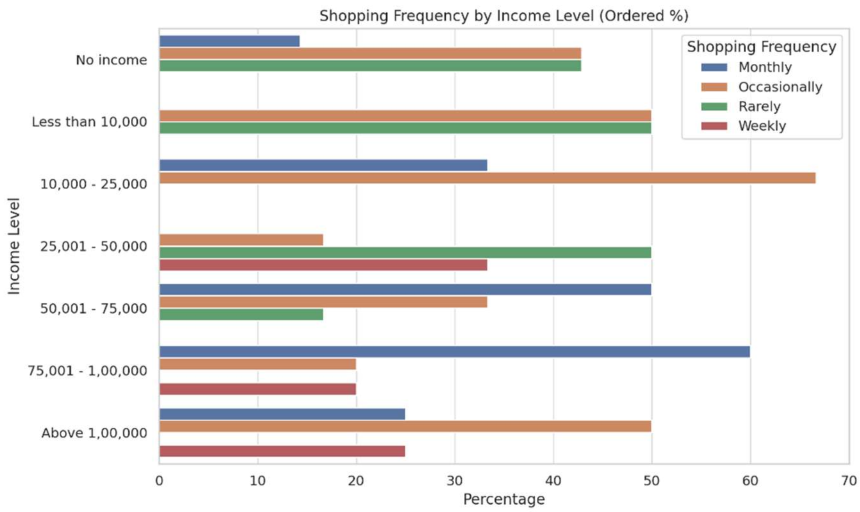

Fig. 1. Shopping frequency by income level (made by author)

Based on the above chart, there is a relative distribution of shopping behaviours within each income group. A larger share of higher-income groups shop monthly or occasionally. Lower-income segments show a broader spread with some rarely or occasionally shopping.

Shopping Frequency by Region

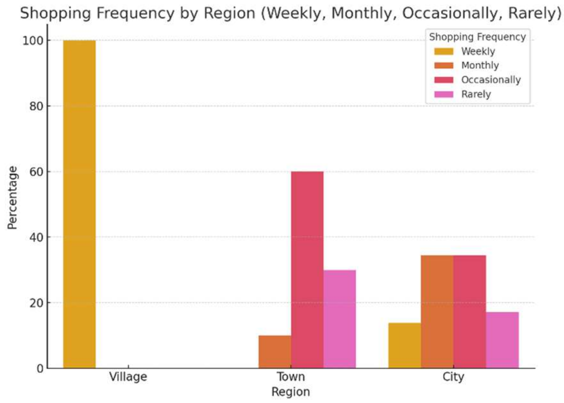

Fig. 2. Shopping frequency by region (made by author)

Based on the survey, faced a limitation in the number of responses from Village users. Otherwise, we observe city users show mixed reviews of shopping frequency. Town users mostly shop occasionally.

Data Breach Victims by Age Group

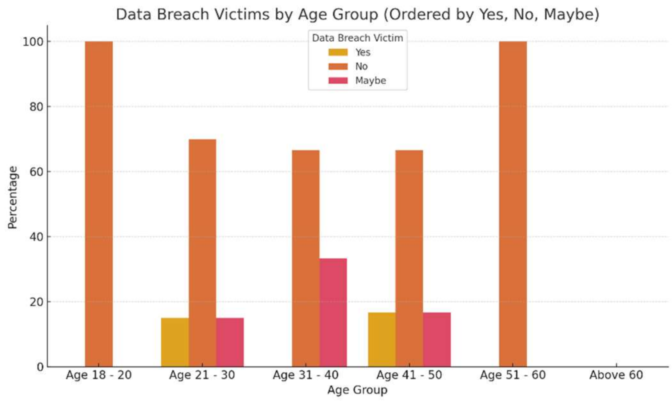

Fig. 3. Data Breach Victims by Age group (made by author)

The Age 21–30 and 41-50 group reports the highest 'Yes' responses, indicating higher exposure or awareness of online scams.

Relation between Cybersecurity and Trust

Considering the survey questions below (in order), a correlation and relation between Cybersecurity and Trust has been analyzed

- I believe Indian digital marketing platforms implement strong cybersecurity measures and certifications (such as ISO 27001 or PCI-DSS). [Referred as **A** in the table]
- I trust a platform more if they offer clear explanations of their data protection and privacy policies [Referred as **B** in the table]
- Secure-looking websites (i.e., https sites that has padlock option and no security warnings from browser) and websites that mention they use data encryption, make me feel more confident in sharing financial details. [Referred as **C** in the table]

- I feel confident and safe sharing my personal information on digital marketing platforms in India [Referred as **D** in the table]

Table 1. Correlation between Cybersecurity Measures and Consumer Trust (made by author)

	A	**B**	**C**	**D**
A	1	0.26	0.12	0.57
B	0.26	1	0.56	0.13
C	0.12	0.56	1	-0.03
D	0.57	0.13	-0.03	1

Relation between Trust and Loyalty

Dependent Variable: "I am more loyal to a digital platform that values my data security…"

From the survey, selected three questions that represent the dimensions of trust

- I trust a platform more if they offer clear explanations of their data protection and privacy policies (Trust via policies)
- My trust in a platform influences my decision to make repeated purchases (Repeated purchase trust)
- I feel confident and safe sharing my personal information. (General confidence)

Table 2. Correlation between Trust and Loyalty (made by author)

Predictor	**Coeffecient**	**p-value**	**Interpretation**
Trust via policies	+0.44	0.0024	Positive and Significant
Repeated purchase trust	+0.45	0.0022	Positive and Significant
General confidence	+0.07	0.5081	Not significant

From the table, we can interpret that platforms that clearly explain policies and build repeat-purchase trust have a strong, proven effect on loyalty.

Relation between Cybersecurity and Online Purchase Behaviour

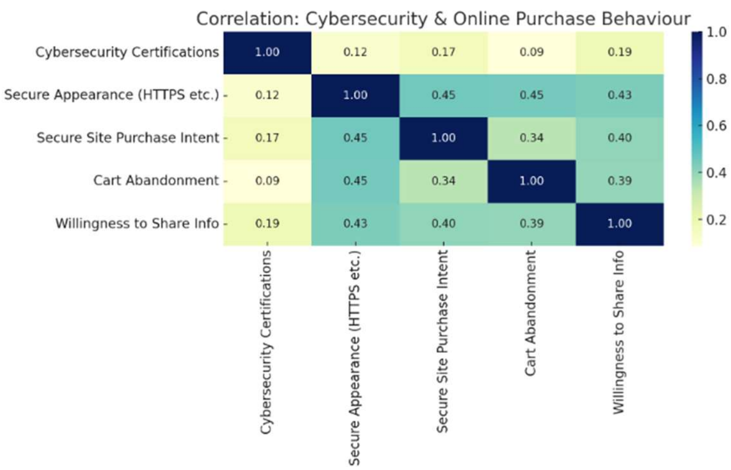

Fig. 4. Correlation between Cybersecurity and Online Purchase Behaviour (made by author)

Based on the results, we observe consumers react more to 'what they can see (HTTPS, padlocks, security badges)' than to technical compliance like ISO certifications

Conclusions

In conclusion, this study demonstrates that cybersecurity plays a pivotal role in shaping consumer trust and loyalty toward digital marketing platforms in India. By adopting a mixed-methods approach, the research uncovered strong positive correlations between visible cybersecurity features such as secure websites, clear privacy policies, and responsive data protection practices and increased consumer trust. These trust elements, in turn, significantly influence consumer loyalty, particularly through repeat purchase behavior and emotional confidence in the platform. While technical certifications like ISO 27001 add value, consumers respond more strongly to easily visible and understandable security cues.

The findings reinforce the strategic importance of cybersecurity as more than a compliance necessity - it is a brand-building tool that can foster lasting consumer relationships. As digital adoption accelerates in India, platforms must align their cybersecurity efforts with consumer expectations by being transparent, proactive, and user focused. Clear communication about data protection, user education on privacy rights, and visible commitment to secure online experiences can create a competitive advantage, enhancing both trust and loyalty in a crowded digital marketplace

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Ayani Malsha Madhushani, Thiththala Pitige. THE IMPACT OF SOCIAL MEDIA MARKETING ON CONSUMER BEHAVIOR IN THE FOODS AND BEVERAGE SECTOR IN SRI LANKA

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Abstract

Research relevance: Food and beverage firms in Sri Lanka extensively use social media marketing because it shapes consumer interactions with brands and influences their purchasing choices. Marketers, along with policymakers, need to understand how social media marketing elements, including electronic word-of-mouth (eWOM) and brand awareness, and two-way communication, affect digital engagement.

Research goal: The research analyses eWOM together with brand awareness and interactivity dynamics that drive consumer actions regarding food and beverage products in Sri Lankan markets. It provides strategic solutions for increasing social media platform-based consumer participation.

Research methods: This study combined a research design that included 384 consumer participants from Western Province and interviews with five marketing professionals to achieve its research objectives. The quantitative data analysis employed descriptive statistics together with correlation and regression analysis, but thematic analysis served to interpret the qualitative findings.

Main findings: The study shows eWOM together with brand awareness shape consumer behaviour in a significant manner, due to which two-way communication acts as a key determinant, though it has a moderate impact. Qualitative data demonstrate that marketing professionals require better digital methods and better ways to interact with customers, along with improved social media content standards for their campaigns.

Keywords: Social media marketing; Electronic Word-of-Mouth (e-WOM); Two-Way Communication; Brand Awareness; Consumer Behaviour of Food and Beverages; Sri Lanka.

Introduction

Social media growth has transformed how consumers interact with brands in digital markets by presenting businesses with new prospects yet entailing specific obstacles. The food and beverage sector in Sri Lanka uses social media platforms including Facebook, Instagram, and YouTube to create new marketing systems for building interactive user content (Dananjana, Yasara & Abeysekera, 2024). Kemp (2024) reported that social media reach in Sri Lanka amounts to 34.2 percent of the population, thus increasing the importance of digital marketing campaigns.

Food and beverage companies face an immense need to adapt to digital marketing changes because brand recognition and electronic word-of-mouth (eWOM) alongside interactive customer engagement affect how consumers view products and decide to buy them (Dissanayake, 2023). The use of social platforms requires more than basic presence because success depends heavily on strategic content development with loyal customer relationships through social connections.

Research showed that brand success through social media operates by building trust among customers while they gauge product values. The failure of companies to adapt to consumer expectations and digital changes in a competitive setting will result in their industry gap. Adult consumers who live in urban areas of Sri Lanka are increasingly using social media platforms for food and beverage brand discovery and assessment, and brand interaction purposes.

Even though social media grows in popularity, local business operations encounter problems with strategy fulfilment along with weak consumer relationships. The combination of constrained marketing spending and poor technical abilities, and low performance analysis used in social media decreases their potential to boost competition. This study works to plug the research gap by exploring the leading social media marketing elements which influence consumer response in Sri Lanka's food and beverage market.

The thesis possesses significant value for Sri Lanka's economic digitization initiatives while helping small and medium enterprises transition to digital customer needs. Consumer interactions with marketing content, including likes and shares alongside reviews and brand engagement, form the basis for this study to derive knowledge about purchase intention and brand loyalty drivers within a developing digital realm.

The research findings generate strategic value that benefits both market strategists together with business managers alongside policy decision makers who want to advance inclusive digital marketing progress. The thesis contains useful guidelines for enhancing digital marketing campaigns and consumer interaction, and trust building through these structured digital initiatives.

- To analyse the scientific research papers regarding the impact of social media marketing on consumer behaviour.
- To identify and analyse the key factors impacting social media marketing on consumer behaviour of food and beverages in Sri Lanka.
- To survey the quantitative impact of social media marketing factors on consumer behaviour regarding food and beverages in Sri Lanka.
- To provide actionable recommendations to improve social media marketing on consumer behaviour of food and beverages in Sri Lanka.

The research investigates social media marketing effects on consumer behaviour toward food and beverage products, which supports Sri Lanka's digital transition plans. The investigation in the Western Province delivers useful digital engagement patterns which assist national marketing methods while improving market competition in urban and rural territories.

Literature Review

Social media marketing in Sri Lanka's food and beverage sector gets analysed through the SOR Model and the TPB, which helps understand how it shapes consumer actions. The SOR model explains that when marketing stimuli from outside sources, such as brand awareness and electronic word-of-mouth, and Two-way communication cause organism evaluations, which lead to behavioural responses like purchase decisions. Consumer predictions and actual behavioural outcomes are possible through the TPB because it integrates psychological components such as attitudes with subjective norms and perceived behavioural control. The theories combine to provide a comprehensive framework which helps researchers understand consumer behaviour patterns in trust development and engagement, and purchase decisions toward digital content. Social media marketing influences product choices along with brand loyalty, according to Dissanayake (2023). Generally, these models help the current study evaluate how digital marketing methods influence consumer behaviour during present-day online market competition.

Electronic Word-of-Mouth (e-WOM)

Electronic Word-of-Mouth (e-WOM) describes consumer-made digital content, including evaluations, social media posts and platform recommendations, which people share across digital platforms. Through its vital function, e-WOM enhances product visibility and builds credibility and trust, which results in better purchase decision influence. Brand-generated advertising gets surpassed by e-WOM because customers interpret its values as more truthful than generalised marketing content. Positive product reviews coupled with influencer testimonials drive consumer trust and mould their attitudes, which leads customers to increase purchase intent in the food and beverage industry (Mohamed & Fonseka, 2023).

The power of e-WOM grows stronger through social media channels, including Instagram, Facebook and TikTok, because users rapidly share visual interactive content across their network (Boldureanu et al., 2025). Another research established that customers rely on their trust in content sources and their excellence to achieve effective e-WOM. Consumer use of e-WOM enables the reduction of buying risks through real-time and credible information about product quality and brand reliability, and user satisfaction. E-WOM functions as a crucial variable for comprehending the behavioural patterns of consumers who navigate Sri Lanka's digital food industry.

Brand Awareness

The degree to which customers perceive brands constitutes brand awareness since they need to recognise brands in multiple contexts (Mokhtar et al., 2018). The understanding of a brand by consumers acts as an essential tool to guide their purchase decisions predominantly in competitive market sectors such as food and beverages. Brand awareness stands as the initial factor of customer-based brand equity because it affects how consumers perceive quality and trust brands and make purchasing decisions. Social media broadens brand recognition in digital platforms through continuously presented messaging and interactive content and brand partnerships with influencers, according to Horsfall & Mac-Kingsley (2018).

Research conducted within the food and beverage sector shows consumers tend to pick known brands over unfamiliar ones during purchasing decisions, thus making brand recognition the dominant variable in purchasing choices. High brand awareness produces positive effects on customer revisit intentions in both hospitality and food service operations. Intensive brand awareness leads to increased customer satisfaction combined with sustained customer loyalty. Efficient social media brand awareness strategies succeed in obtaining new customers and maintaining the loyalty of current customers through continuous education and reinforcement of brand identity and emotional connection.

Two-Way Communication

The reciprocal communications between companies and their customers in digital marketing happen through social media platforms and email, as well as chatbots. The business engages in an interactive exchange to gain immediate feedback and customize content, which leads to increased customer participation (Nimusima et al., 2022). The practice of two-way communication by brands results in enhanced customer relationships along with increased satisfaction and brand loyalty because consumers notice brand responsiveness through this approach (Kulathunga et al., 2024).

Research demonstrates that food and beverage companies receive notable benefits from conversational marketing techniques that include comment replies and live hosting and messaging applications. The timing of brand responses combined with the perception of heard feedback enables consumers to trust the brand more and changes their perception of brand reliability.

This approach functions as an essential brand humanization method that forms emotional connections and delivers significant consumer encounters. Brand image can be reduced through message overabundance or messaging inconsistency, according to research findings. The effective use of two-way communication needs authentic communication and rapid engagement to drive behavioural changes of consumers within digital market competition.

Consumer Behaviour of Food and Beverages in Sri Lanka

The food and beverages market in Sri Lanka experiences consumer conduct patterns that result from cultural values, along with health awareness and pricing factors and now shows growing digital consumer involvement. The food and beverages sector has transformed radically because social media and e-commerce platforms have changed consumer behaviour from discovery to evaluation and purchasing (Dananjana, Yasara & Abeysekera, 2024). People residing in urban areas, particularly within the Western Province, have begun preferring effortless shopping combined with product recognition and promotional internet deals (Dissanayake, 2023).

The digital era has boosted the influence of peer opinions since customers use product reviews and social media influencer endorsements along with user content to make their purchasing choices (Hiroshima & Nismi, 2024). After COVID-19, health safety concerns became essential drivers that pushed consumers to choose organic and package-free hygienic food products. The purchasing decisions for consumers in suburban and rural markets are controlled by cost affordability and ease of accessibility.

Sri Lankan food and beverages companies build customer loyalty by maintaining reliability in products and services while meeting cultural consumer needs as well as security standards achieved through online communication. Companies using social media successfully to showcase authenticity and provide interactive consumer engagement while understanding changing consumer interests obtain substantial power to retain customers and build brand value in their domestic market.

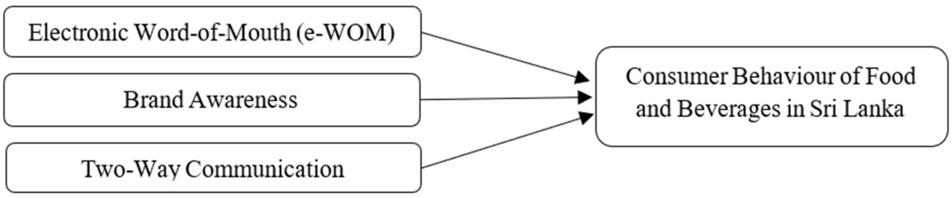

Fig.1. Conceptual Framework (Author developed)

- H1: Electronic word of mouth (e-WOM) has a significant impact on consumer behaviour of food and beverages in Sri Lanka.
- H2: Brand awareness has a significant impact on consumer behaviour of food and beverages in Sri Lanka.
- H3: Two-way communication has a significant impact on consumer behaviour of food and beverages in Sri Lanka.

Methodology

The research study uses a combined quantitative and qualitative method to analyse how social media marketing affects F&B sector customers in Sri Lanka. This research design unites qualitative and quantitative approaches to study fully the effects social media has on customer buying choices.

Research Sample

A structured survey was distributed to 384 Western Province Sri Lankan consumers as part of the quantitative assessment, which relied on stratified random sampling for participant selection. People were allowed to participate in the study if their online activity was high and they already had experience with digital marketing campaigns from food and beverage brands.

Five professionals working in food and beverage activities participated in semi-structured interviews as part of the qualitative study section. The interviews supplied detailed information about business strategies and consumer engagement patterns, together with operational difficulties that affect social media effectiveness in practice.

Data Collection Process

The research instrument consisted of a self-administered questionnaire built from literary resources to assess electronic word-of-mouth (eWOM), brand awareness, Two-way communication, trust and purchase intention. Participants evaluated every statement according to a five-point Likert rating scale, where they could indicate between total disagreement and complete agreement. Multiple data collection methods were employed throughout the three months from February to May 2025, which included both online and face-to-face approaches to boost accessibility and response diversity.

An experimental researcher interviews five food and beverage marketing experts working as brand managers to acquire qualitative insights. The duration of each interview equalled 45 minutes while participants had the choice between meeting in person or conducting the interview online. Participating subjects granted permission for audio recording during their interviews, after which researchers transcribed the data verbatim for thematic analytical examination.

Data Processing and Analysis

The researchers processed and analysed survey data through SPSS. Statistics describing the data were applied to analyse both participant demographic information and survey items. The study used correlation analysis to determine variable connections and multiple regression analysis to verify the theoretical hypotheses.

Regression Model:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon \qquad (1)$$

Where,

Y = Consumer Behaviour of Food and Beverages in Sri Lanka
X_1 = Electronic Word-of-Mouth (e-WOM)
X_2 = Two-Way Communication
X_3 = Brand Awareness
ϵ = error term.

Qualitative Analysis

Thematic analysis of interview transcripts allowed researchers to identify common patterns and themes regarding social media behaviour as well as the perceived advantages and challenges along with consumer interactions. The researcher developed codes through an inductive process to explore both deep experiences and practical learning points.

Limitations

Generalisation of the study's findings becomes restricted because the research focuses exclusively on Western Province consumers. The research failed to include all marketing variables while using eWOM, brand awareness, and Two-way communication alongside five limited qualitative interviews due to time restrictions.

Results

The study established that electronic word-of-mouth (eWOM) assessment and brand awareness produce the highest influence on Sri Lankan consumers who intend to buy food and beverages. Two-way communication, while still significant, demonstrates a moderate level of impact. The article's numerical statistics gain additional backing from expert interviews with marketing professionals who describe consumer behaviour involving an increasing dependence on social media content alongside peer reviews to make buying choices.

Descriptive Analysis

The main research variables and their descriptive statistics appear in Table 1. All statements received ratings through a 5-point Likert scale.

Table 1. Descriptives

Variable	Mean	Std. Dev	Variance	Skewness	Kurtosis
Electronic Word-of-Mouth (e-WOM)	4.02	0.66	0.44	-0.31	-0.14
Two-Way Communication	3.89	0.71	0.50	-0.26	-0.42
Brand Awareness	3.76	0.69	0.48	-0.21	-0.39
Consumer Behaviour	4.01	0.64	0.41	-0.34	0.05

The data indicate a generally high level of agreement among participants across all variables, with a slightly negative skew, suggesting strong positive perceptions of social media influence.

Correlation Analysis

Pearson correlation coefficients of Electronic Word-of-Mouth (e-WOM), Two-Way Communication, Brand Awareness, and Consumer Behaviour of Food and Beverages in Sri Lanka are shown in Table 2.

Table 2. Pearson Correlation Coefficients

Variable	Consumer Behaviour	Electronic Word-of-Mouth (e-WOM)	Two-Way Communication	Brand Awareness
Consumer Behaviour	1	0.66**	0.61**	0.48*
Electronic Word-of-Mouth (e-WOM)	0.66**	1	0.53**	0.41
Two-Way Communication	0.61**	0.53**	1	0.39*
Brand Awareness	0.48**	0.41**	0.39*	1

*Note - *p < 0.05; **p < 0.01*

The findings indicate that purchase intention proves positively associated with both eWOM and Brand Awareness measurements, and Two-Way Communication plays a significant but not as strong role.

Regression Analysis

Table 3. Regression Model Summary

Predictor	B	Std. error	β	t	sig
Electronic Word-of-Mouth (e-WOM)	0.52	0.07	0.66	7.43	0.001
Two-Way Communication	0.46	0.08	0.61	5.75	0.001
Brand Awareness	0.31	0.09	0.48	3.44	0.004
Constant	1.15	0.24			

$R^2 = 0.59$, $F(3,380) = 67.9$, $p < 0.001$

The study data validates eWOM together with brand awareness as major variables that influence purchase intention. Two-way communication, while slightly less influential, still plays a significant role in consumer behaviour.

Interview Data Analysis - Thematic Analysis

The analysis used thematic analysis to study the qualitative information obtained from interviewing five Sri Lankan food and beverage sector professionals and business owners. The analysis revealed various significant topics that explain the understanding of social media marketing among industry professionals, together with their implementation methods and the obstacles they experience.

The interview participants stressed the significance of interaction between companies and consumers for establishing valuable customer connections. Social media engagement through instant feedback and direct comment exchange, and custom messages were seen as the critical elements for developing trust and building brand commitment. However, many noted an inconsistency in consumer engagement across platforms.

All respondents confirmed that customer-generated material reviews together with influencer recommendations deliver substantial effects on brand value and purchasing behaviour. The interview participants saw favourable electronic comments from users having a greater impact than traditional paid promotional efforts, especially with younger demographics.

Users understood that brand recognition reached its peak through the platforms Facebook and Instagram. Research indicates that regular content sharing with visual branding elements alongside collaboration success in keeping brands visible while audiences remember them, although maintaining consistent brand messaging proved difficult for some users.

Even though the interview participants recognised social media marketing's beneficial value, they also identified financial restrictions and content creation problems, and insufficient staff for handling online interactions as major operational barriers. Social media maximisation faced challenges due to these operational restrictions that participants found critical.

The interview results strengthen the statistical findings by emphasising three main behavioural factors, which include eWOM, brand awareness, and interactive communication. Participants supported digital marketing capacity programs and extra creative content investment to boost the effectiveness of social media marketing strategies.

Conclusions

Research proves that eWOM, alongside brand awareness and Two-way communication, act as an essential factors which shape consumer choices within Sri Lanka's food and beverage market. Research data using both quantitative methods and qualitative interviews establishes the three developed hypotheses while demonstrating that social media marketing plays a fundamental part in guiding consumer purchase behaviour.

Electronic Word-of-Mouth (eWOM): Data shows that eWOM exhibits the most substantial positive connection to purchase intentions among consumers ($r = 0.66$, $p < 0.01$). The regression analysis results demonstrate H1 to be valid through showing a substantial influence ($\beta = 0.66$, $p < 0.001$). Consumers heavily depend on peer assessments along with influencer posts and user-created feedback for their food and beverage product choices. The research participants confirmed eWOM creates trust in consumers and minimises risks, particularly among digital generations.

Brand Awareness: Study results demonstrated a strong relationship ($r = 0.61$, $p < 0.01$) between brand awareness and consumer reactions, which produced a statistically meaningful effect ($\beta = 0.61$, $p < 0.01$)

and validated H2. Online presence consistency alongside logo visibility, along with content recall, produces positive effects on consumer perceptions based on thematic analysis results. High visibility of brands through social media platforms triggers more customers to try products and increases their brand loyalty, according to interview participants.

Two-Way Communication: Two-way communication demonstrated an influential connection to consumer behaviour, which accounted for 48% of the relationship but maintained statistical significance with a p-value lower than 0.01 ($r = 0.48$, $\beta = 0.48$). The findings confirmed H3. Consumer interaction with brands occurred more frequently when brands used communication tools like messages along with interactive features. Brand credibility and engagement require responsive customer service, according to individuals who provided interviews.

Theoretical and Practical Implications: This research expands academic literature through the integration of the Stimulus-Organism-Response (SOR) Model and the Theory of Planned Behaviour (TPB) into digital marketing strategies dedicated to emerging economies. Marketing organisations together with policy teams should direct their efforts toward developing strategies which grow electronic Word of Mouth influence and boost brand exposure alongside creating genuine consumer connections. Companies that allocate resources toward these approaches experience better success at shaping customer buying decisions along with building lasting customer loyalty.

Future Research Directions: The research exclusively focused on Sri Lanka's Western Province area. Future research needs to examine the buying patterns of consumers in rural and semi-urban areas to achieve broader generalisation. Research following consumer behaviour across years would examine how digital market changes, together with platform innovations, affect food and beverage industries' customer engagement and brand performance.

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Rodney Fernando Liyanage. FINANCIAL IMPLICATIONS OF DIGITAL ADOPTION IN SMALL AND MEDIOM-SIZED ENTERPRISES IN SRI LANKA'S MANUFACTURING SECTOR

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Abstract

Research relevance. The competition of small and medium-sized enterprises in the manufacturing industry of Sri Lanka depends much on digital transformation. Still, widespread use is hampered by financial constraints, technical shortfalls, and lacking infrastructure. Sri Lanka Ministry of Industry data from 2023 show that only 25% of small and medium-sized enterprises in Sri Lanka have merged digital solutions, therefore underlining the pressing need of dealing with financial obstacles. For sustainable economic growth and increased productivity, it is absolutely critical to grasp the financial consequences of digital adoption.

Research goal. This research evaluates the financial impact of digital adoption, focusing on cost-benefit dynamics, major obstacles, and ROI, with the aim of finding strategies to enhance financial stability and cost for small businesses.

Research methods. The study uses a mixed-methods technique that mixes qualitative and quantitative research. Whereas thorough interviews with small company executives and financial managers will yield contextual insight into decision-making problems, organized surveys will measurably capture financial patterns. Secondary findings from financial reports and case studies will complement first ones to enable a thorough cost-effectivity, income growth, and financial risk analysis related to digital adoption.

Main findings. Digital transformation in Sri Lanka demands substantial upfront expenditures, the research shows long-term advantages such better operational efficiency, lower costs, and higher market competitiveness. Still, major limitation is the restricted availability of funding, which calls for government incentives, financing assists, and deliberate financial planning.

Keywords: Digital adoption; Small and Medium Sized Enterprises; Financial implications; Sri Lanka's manufacturing sector; Return on Investment; Financial barriers.

Introduction

With almost 45% of the labour force employed and over 52% of the national GDP contributed, Small and Medium-Sized Enterprises (SMEs) form the economic backbone of Sri Lanka. Particularly the manufacturing sector is quite important for regional industrial development and domestic value creation. But the quick integration of digital technologies into worldwide manufacturing and supply chains challenges the competitiveness of these companies more and more.

The Ministry of Industry in 2023 reported that just 25% of SMEs in Sri Lanka have adopted any type of digital solution, despite the evident advantages of digital adoption including improved operational efficiency, better decision-making, and enhanced market reach.

This study intends to assess the financial consequences of digital adoption among SMEs running in the manufacturing sector of Sri Lanka. The study especially addresses financial constraints, cost-benefit analysis, and investment trends that impede technological development. The theory of this study is that although funding restrictions and poor financial planning greatly limit adoption, digital adoption by SMEs improves financial performance.

Combining quantitative polls from 150 SMEs spread over four districts with qualitative interviews involving 15 SMEs owners and financial managers, a mixed-methods approach is followed. Furthermore, examined in order to support trends in cost structures, return on investment (ROI), and financial risk management are secondary data from case studies and financial statements.

According to the research's primary findings, digitalization has significant advantages, such as an average yearly revenue increase of 18% and up to 22% in operational cost savings, despite requiring a significant initial investment of LKR 1.5 million to 3 million. However, only 40% of SMEs have formal digital budgets, and more than 70% have trouble obtaining credit for digital investments.

By providing useful advice for improving SMEs' financial preparedness and encouraging inclusive digital transformation in Sri Lanka's manufacturing sector, this study adds to the conversation in academia and policy.

Literature Review

In redefining business competitiveness all over the world, digital transformation has emerged as a critical driver. Particularly in developing nations, for small to medium-sized enterprises it promises increased market growth, activity efficiency, and productivity. But financial limitations, scant digital skills, and insufficient institutional support frequently slow down the change. Many academics and experts have pointed out the game-changing nature of digital technologies. Improving small business productivity and judgment calls, Kantane et al. (2010) stressed the need of process automation and cloud computing. Deloitte in 2022 also stated that small businesses applying digital solutions see 2.5 times greater revenue growth than their less digitally savvy counterparts. These results highlight the competitive edge of digitalization.

Although the Sri Lankan situation reflects these worldwide trends, it also offers special difficulties. The World Bank (2021) noted that over 60% of SMEs in South Asia lack sufficient access to capital, so constraining digital infrastructure investment. Smith (2017) claimed that conventional financial institutions frequently underestimate intangible digital assets, hence making credit acquisition for such investments especially tough.Although coverage is restricted to urban areas, the Ministry of Industry in Sri Lanka (2023) launched digital voucher programs for SMEs to partially support technology adoption. Government agencies have tried to tackle these problems with pilot programs, grants, and capacity building initiatives. As per worldwide research, cooperative models between businesses, academia, and governments would be a feasible way of surmounting financial and technical obstacles (Nguyen et al., 2020).

Methodology

Research Design

The research design of this study is mixed methodology including both quantifiable and qualitative techniques. This mix helps to give a thorough grasp of the research question by synthesizing numerical data with abundant contextual knowledge. The results of the study benefit in validity, dependability, and depth from this methodological triangulation.

Quantitative Component

The quantitative portion of the study entailed obtaining organized data from 150 SMEs in Colombo in Sri Lanka. A structured questionnaire created to capture data on digital investments, financial performance results, and sources of financing for digital projects was the main tool employed. Initial online investment expenses, yearly digital costs, sales growth rates, ROI, and financial risk exposure were among the key factors quantified in this module. Employing methods such as descriptive statistics, correlation analysis, and regression analysis, the gathered data was analysed using SPSS software to discover important patterns and associations.

Qualitative Component

Regarding the qualitative aspect, the research included semi-structured interviews of 15 small business owners, CFOs, and operations managers of chosen SMEs. The interviews were meant to provide more thorough understanding of how small and medium enterprises view digital adoption, their tactics, and their difficulties. The thematic content analysis of the interview data helped the researcher to discover regular patterns and pull main financial and strategic themes pertinent to digital transformation.

Secondary Sources

Apart from primary data, secondary sources were used by the research to complement and put the results into context. Selected small company annual publications from the manufacturing sector, financial records from chosen case study businesses, and official digital policy documents were among the sources.

Results

Surveys Results

Significant financial effects of digital adoption were found by quantitative studies of 150 small and medium-sized companies. Though results varied greatly, with the best performers exceeding 20%, SMEs reported an average revenue growth of 18% (SD = 6.2%), after implementation. Although an average of 12% (SD = 5.8%) operation costs were lowered, 15% of businesses saw cost increases resulting from unanticipated expenses including cybersecurity (Table 1). Delivered with the best ROI (22%), ERP systems exceeded other technologies (Fig. 1). While there is a strong positive relationship between cost reduction and ROI ($r = 0.72$. Regression analysis revealed that every Rs. 1 million invested in digital tools is correlated with a 5.8% revenue increase ($\beta = 0.58$, *p* = 0.003). Fig. 2 Technologies driven by efficiency.

Table 1. Surveys Analysis Results (Source: Created by the author).

Variable	Key Finding	Statistical Measure	Implication
Revenue Growth	Average post-adoption growth:18% (SD = 6.2%)	Descriptive Statistics	High variability; top performers achieved >20% growth.
Operational Cost Change	Average reduction: -12% (SD = 5.8%)	Descriptive Statistics	Majority saved costs.
ROI	ERP adopters achieved 22% ROI (highest among technologies).	Descriptive Statistics	ERP systems are most cost effective.
Investment ↔ Revenue	LKR 1M invested → +5.8% revenue growth	Regression (β =0.58, * p* = 0.003)	Larger investments drive significant revenue gains.
Cost Reduction ↔ ROI	Strong positive correlation (r =0.72, *p* < 0.05)	Correlation Analysis	Cost-saving technologies directly improve ROI.
Risk Perception ↔ ROI	Higher risk perception reduced ROI (β = -0.33, *p* = 0.01)	Regression Analysis	Risk-averse SMEs achieved lower returns.

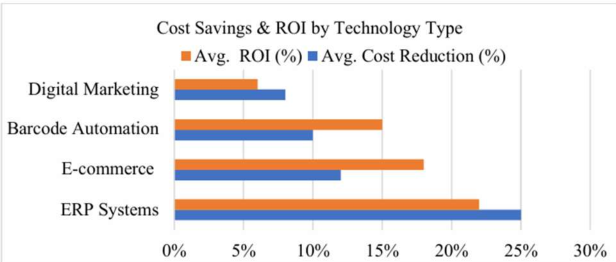

Fig. 1. Cost Savings & ROI by Technology Type (Source: Created by the author)

Fig. 1. With ERP systems as the most trustworthy path for financial results, advanced technology adoption in SMEs in Sri Lanka's manufacturing sector results in increased ROI and cost reduction.

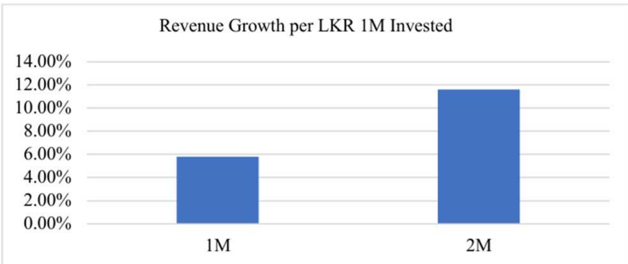

Fig. 2. Revenue Growth per LKR 1M Invested (Source: Created by the author)

Fig. 2. Through deliberate digital spending, SMEs see income increase a strong positive correlation (β coefficient 0.58) suggests consistent revenue development from digital activities.

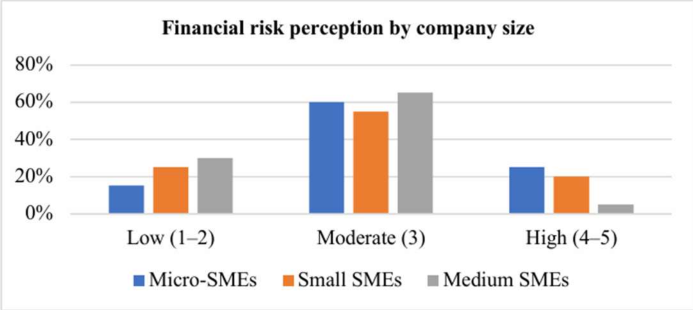

Fig. 3. Financial risk perception by company size (Source: Created by the author)

Fig. 3. The SME levels of Sri Lanka's manufacturing industry view financial risk variably. While medium-sized firms have the greatest low-risk perception (30%), micro SMs exhibit greatest risk aversion, probably because of easier access to resources and institutional support.

Interviews Results

Critical contextual barriers to digital adoption were found by qualitative interviews with 15 SMEs (Table 2). Reflecting different strategic priorities, 67% ranked ROI as the justification for investments while 33% concentrated on short-term cash flow constraints. One of the main challenges turned out to be unexpected expenses. 40% of respondents said they had unanticipated cybersecurity costs and 33% said they mentioned regular maintenance costs. Given limited access to official credit, especially for intangible digital assets, 73% of respondents depended on internal funds, hence financing issues were rather common (Fig. 6). Rural SMEs suffered clear inequalities. These revelations place survey results in context and draw attention to systematic financial and spatial constraints preventing fair digital transformation.

Table 2. Interview Results (Source: Created by the author)

Theme	Key Findings
Decision-Making Factors	67% prioritized ROI; 33% focused on cash flow.
Unexpected Costs	40% faced cybersecurity costs; 33% cited maintenance fees.
Financing Challenges	73% relied on internal funds due to loan access barriers.
Rural Disparities	Rural SMEs lacked access to training and technical support.
Policy Needs	80% requested low-interest loans; 60% emphasized skill development.

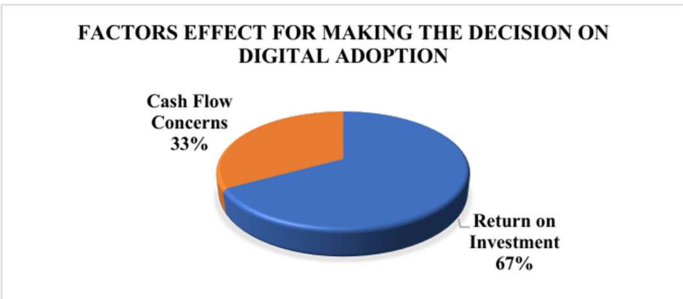

Fig. 4. Factors Effect for Making the decision on digital adoption (Source: Created by the author)

Fig. 4. Shows that return on investment was cited by most SMEs as the main source of funding. According to the study, 33% of SMEs put short-term cash flow ahead of long-term return on investment.

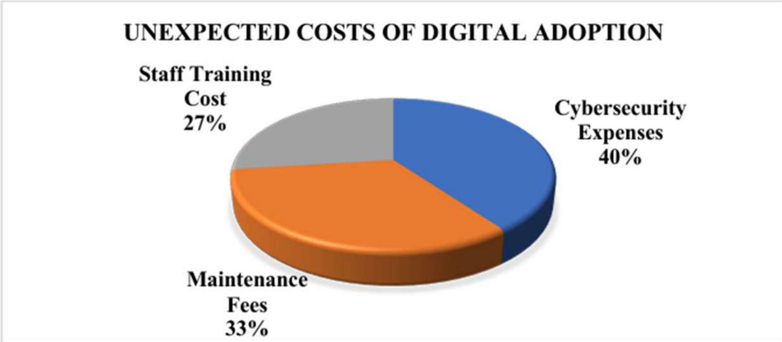

Fig. 5. Unexpected Costs of Digital Adoption (Source: Created by the author)

Fig. 5. Sri Lankan manufacturing SMEs experience three unplanned costs during digital adoption: 40% encounter unexpected cybersecurity expenses; 33% underestimated ongoing costs for software upgrades, licenses, and tech support; and almost a third faced unexpected training costs.

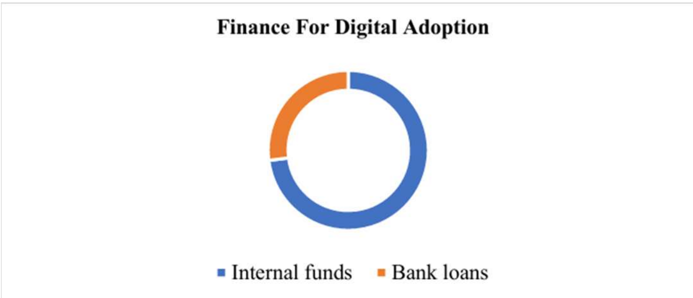

Fig. 6. Finance For Digital Adoption (Source: Created by the author)

Fig. 6 Although 27% of Sri Lankan manufacturing SMEs need bank loans, internal funds73%, hinder digital projects because of structural issues like strict collateral policies and risk-averse lending practices

Case Studies Results

The scalable impact of digital tools across Sri Lanka's manufacturing SMEs was illustrated by four comprehensive case studies (Table 3). KTI Engineers streamlined precision engineering procedures and cut labor expenses by 25% in just 18 months by automating CAD/CAM. Nature's Beauty achieved ROI in less than a year by reducing material waste by 20% and improving financial transparency with an ERP system. Through e-commerce, Vidulaka Industries increased access to rural markets, resulting in a 12% increase in sales and quicker payment cycles through digital invoicing. By employing barcode tracking, UKL Industries was able to reduce packing errors by 15%, demonstrating the feasibility of automation even in low tech settings.

Table 3. Case Studies Analysis Results (Source: Created by the author)

Case Study	Digital Tool	Key Findings	ROI Timeline	Relevance
KTI Engineers	CAD/CAM Automation	25% labor cost reduction; improved delivery timelines.	18 months	Automation benefits for precision engineering.
Nature's Beauty	ERP System	20% reduction in wastage; faster financial reporting.	12 months	ERP's role in operational/ financial efficiency.
Vidulaka Industries	E-commerce Platform	12% revenue growth; reduced payment delays via digital invoicing.	12 months	Digital tools overcoming geographic barriers.
UKL Industries	Barcode Tracking	15% fewer packaging errors; 12% faster dispatch.	12 months	Automation in low-tech environments.

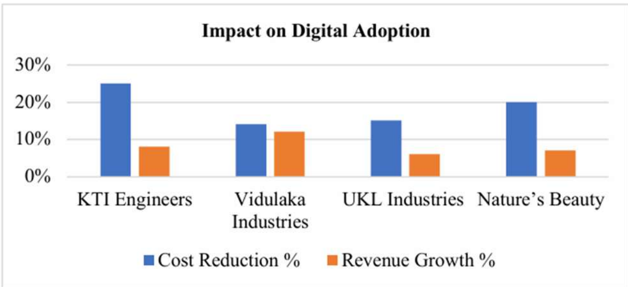

Fig. 7. Impact on Digital Adoption (Source: Created by the author)

Fig. 7. With ERP, automation, e-commerce, and specialized tools increasing productivity and solving regional challenges, digital adoption enhances SME financial performance, therefore underlining the need of tailored solutions.

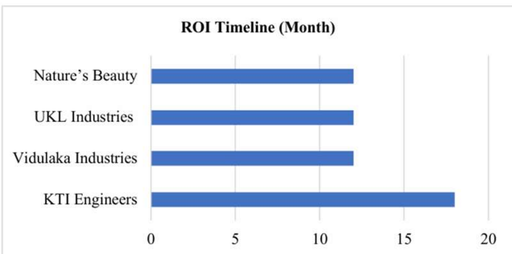

Fig. 8. ROI Timeline (Source: Created by the author)

Fig. 8. Though it needs strategic coordination, financial capability, and skill development as well as patient capital digital adoption in Sri Lankan manufacturing SMEs can support inclusive growth.

Discussion

The triangulation of case study analyses, interview insights, and survey data highlights the two-pronged nature of digital adoption for SMEs in Sri Lanka. Although automation decreased operating costs by 15–25% (e.g., KTI Engineers) and ERP systems showed the highest return on investment (22%) these benefits were not evenly distributed because of systemic barriers. Interviews provided context for the 73% of SMEs that relied on internal funds, even though surveys showed that larger investments (LKR 1M) drove +5.8% revenue growth, in line with global trends (Deloitte, 2022). Examples such as Vidulaka Industries' 12% e-commerce revenue growth confirm that digital tools can break down geographical boundaries. However, interviews revealed that 40% of SMEs experienced unforeseen cybersecurity expenses, indicating a lack of risk readiness. High variability is concealed by the 18% average revenue growth, highlighting the fact that risk aversion and financial limitations, rather than technological resistance, are the main adoption bottlenecks.

Recommendations

- Start focused grant programs for rural SMEs to help with upfront digital expenses.
- Provide tax breaks for verified digital investments, such as e-commerce platforms and cybersecurity tools.
- Provide loan products for intangible digital assets that are affordable for SMEs and have adjustable collateral terms.
- Create regional digital hubs to close the skills gap between urban and rural areas by offering cybersecurity workshops and technical training.
- Encourage collaborations between academia and business to customize ERP and automation training for SMEs in the manufacturing sector.

Conclusions

With ERP systems generating a 22% return on investment and automation cutting costs by 25%, this study demonstrates that digital adoption improves the financial performance of SMEs. However, Sri Lanka's manufacturing SMEs are faced with a conundrum: although digital tools have the potential to revolutionize their industry, their adoption is hindered by a lack of funding (70% credit access issues), a lack of skills, and unforeseen risks (like cybersecurity). Systemic interventions are necessary for inclusive digital growth, according to the mixed-methods approach, which includes case studies verifying scalability, interviews contextualizing financial barriers, and surveys quantifying ROI trends.

By highlighting the importance of institutional support in reducing financial risks, the study closes the gap between theories of global digital transformation and Sri Lankan context. Contributions in practice. To enable equitable digital growth, policymakers and financial institutions should give priority to financing models that are focused on SMEs and the development of rural capacity. In order to improve context-specific tactics, future studies should examine the long-term effects of digital adoption and cross-sectoral comparisons. By tackling these issues, Sri Lanka can use digital transformation to strengthen its manufacturing SMEs, which are the backbone of its economy, and guarantee resilience in a global marketplace that is becoming more and more digital.

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Godwin Chakkalakkal Joshy. EVALUATION OF IMPACT OF WORK LIFE BALANCE ON JOB SATISFACTION IN MANUFACTURING INDUSTRIES IN LATVIA

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Abstract

Research relevance: Work-life balance (WLB) has emerged as an essential component in determining job satisfaction, particularly in the manufacturing industry, which is characterized by demanding work conditions and shift-based schedules that have an effect on the personal and professional lives of workers. On average, the manufacturing sector in Latvia accounts for around 15% of the country's gross domestic product and employs approximately 22% of the overall labor force.

Research goal: To evaluate the impact of work-life balance on job satisfaction of the Latvian manufacturing industry.

Research methods: Data gathering methods include reviewing previous literature, conducting surveys, and conducting interviews. To assess the impact of work-life balance on job satisfaction in the manufacturing sector. Survey analysis descriptive statistics, inferential statistics, reliability analysis, and multiple regression analysis, as well as ANOVA analysis. IBM SPSS and Microsoft Excel were used to accomplish the analysis.

Main findings: With 96.5% of the variance in job satisfaction explained by the independent variables, the regression analysis reveals that elements related to work-life balance clearly affect job satisfaction. This emphasizes the need of maintaining a good work-life balance in order to raise staff satisfaction.

Keywords: Work-life balance; Job satisfaction; Manufacturing industries; Performance.

Introduction

Because of the spread of commercialization and advancements in technology, there has been a substantial amount of effort made over the course of the past few decades to assess the implications of remote employment. This has been the case because of technological advancements. Working from any place in the globe while retaining the greatest possible degree of access to the globe Wide Web is now possible because to the advancements in technology that have made this endeavor possible. It is thus possible that between 80 and 90 percent of the workforce in the United States would be interested in working online on a part-time schedule, as stated by Global Workplace Analytics (GWA), a firm that provides research consulting services. According to the results of the research, this must be the case.

Research relevance is that Work-life balance (WLB) has emerged as an essential component in determining job satisfaction, particularly in the manufacturing industry, which is characterized by demanding work conditions and shift-based schedules that have an effect on the personal and professional lives of workers. On average, the manufacturing sector in Latvia accounts for around 15% of the country's gross domestic product and employs approximately 22% of the overall labor force. The use of flexible work arrangements, employee wellness initiatives, and supportive leadership tactics has been shown to result in a gain of 25-30% in job satisfaction and a decrease of 20% in employee turnover, according to research.

The aim of the task is to evaluate the impact of work-life balance on job satisfaction of the Latvian manufacturing industry.

The result of this is that employees are becoming more optimistic about the possibility of more workplace flexibility, which may have repercussions for job satisfaction, overall employment performance, work-life conflict, and/or organizational commitment depending on the circumstances. Over the last several years, the media has paid a great deal of attention to the concept of working from the comfort of one's own home. Others are of the belief that working from home is not at all the ideal place since it allows for more hurdles to come from the home environment. While some people feel that it helps workers to be more productive because there are less interruptions to projects, others are of the opinion that not working from home is the best location. In addition, rules that are imposed by the state have been implemented to battle the virus.

There are some members of the academic community who are of the opinion that the broad study of remote work is based on erroneous assumptions on the advantages and disadvantages of this trend. Working remotely is done on a full-time basis, working remotely for an extended period of time is done, and the company reaps the advantages of having remote workers (i.e., cost savings). There have been twenty years of research conducted on the consequences of telecommuting, and the conclusions have been contradictory about the good and bad effects on job satisfaction, employee commitment, and work-life conflict related to telecommuting.

There have been very few academics who have investigated the potential moderators of work-from-home (WFH) up to this point. Consequently, in light of the current state of knowledge on the issue, the purpose of this research is to contribute to the limited body of literature on the topic by investigating the connection between remote work and job satisfaction. The purpose of this research is to investigate the relationship between working remotely and job satisfaction, specifically focusing on the influence of work overload, a feeling of independence, and the hardship of commuting.

Literature Review

For the purpose of policy and research, (Iswahyudi, 2023) investigated the factors that contribute to the discussion around the topic of work-life balance. After that, he looked into the concept of equilibrium and considered how it influenced the relationship between one's personal life and one's professional life. The author came up with a model that illustrates the advantages, disadvantages, and consequences of maintaining a healthy work-life balance. Additionally, some extra studies are presented, which suggest the components that need attention. Even so, Another study was carried out by (Arief et al., 2021) with two primary objectives: first, to evaluate the ways in which lodging managers perceive the challenges of maintaining a healthy balance between their personal and professional lives, and second, to investigate whether or not their personal life has an impact on their professional life, or whether it has the opposite effect. According to the findings, the majority of hotel managers think that they have been successful in balancing their personal lives with their professional demands. Building a conceptual framework for work-life balance was the primary emphasis of this study that was conducted. In (Fahlevi et al., 2020) conducted research on the basic issues surrounding work-life balance, paying special attention to the practices and changes that are prevalent in business. According to the findings of the study, factors that have a negative impact on work-life balance include lengthy and unsocial working hours, job instability, unclear role, a lack of flexibility, and stress from life.

Rohita et al. (2022) study on a wide range of generations highlights the need of maintaining a healthy work-life balance. According to the findings of the poll, professionals of the present generation place a greater emphasis on maintaining a healthy balance between their professional and personal lives than workers of previous generations did. Companies that are in the business of recruiting will want to focus their efforts on hiring people who will provide them an edge over their competitors in the market. According to the findings of a poll, members of the younger generation known as Millennials have a distinct perspective on job satisfaction and work-life balance. In a study that was quite similar to this one, (Dian Lestari & Rahardianto, 2021) discovered that different generations had different expectations about the work-life balance, and these expectations are mirrored in the workforce. The data showed that there is a lot of interest in modifying the hours in order to make it possible to work from home or to lessen the work schedules.

The study that (Novianti & Fuadiputra, 2021) conducted on the different aspects of work-life balance Within the context of Italy, the concept of work-life balance seems to have diminished in comparison to other concepts. The participants were employed in a tough international luxury hotel that was focused on the satisfaction of its guests in an urban setting. In spite of the fact that having more flexibility in work schedules helps to lessen conflicts related to work-life balance, the findings suggest that having long hours and irregular schedules has a significant negative impact on social life because they clash with commitments linked to family. Despite the fact that hotel management provide organizational support in the form of working time flexibility, the study also revealed that the implementation of work-life balance practices at this Italian hotel is still in its infancy.

Following the acquisition of a basic understanding of work-life balance, the material that was explored centered on the ways in which it impacted other parts of life. Research has shown that a lack of balance between work and personal life may directly contribute to societal issues such as delayed parenthood, declining birth rates, an older population, and a decrease in the availability of labor. It has been shown that policies that promote work-life balance are beneficial for individuals, their families, companies, and society as a whole. Studies conducted by other researchers, on the other hand, demonstrated that the associated benefits were not always realized, and that restrictions concerning work-life balance might potentially result in gender imbalances and increased conflict in both the personal and professional arenas. While the study that comes after this one discusses the necessity of working hours in achieving a healthy work-life balance, this one is more concerned with social issues.
In a separate piece of study, (Malik et al., 2014) studied how flexible working hours effect the healthy balance between work and family life. According to the findings, having more flexibility in one's job situation may assist one in achieving a better work-family balance. Employees who reported to have greater flexibility in their positions were found to have achieved a better balance between their obligations at work and their obligations to their families in typical conditions. There has been a limited amount of supplementary study carried out for the purpose of investigation in the same subject, which is the working hours and work life balance research. Prolonged hours are dependent on the visible reality that individuals who are engaged in work that is both extremely exciting and fulfilling truly like them.

Research on this impact was conducted by (Cusipag et al., 2024). found that the majority of recruiters, which accounts for 85 percent, had seen candidates turning down employment owing to a lack of adequate WLB. In today's world, workers juggle the demands of their jobs, the demands of their long commutes, the responsibilities of parenting, and the needs of maintaining their social lives and their homes. It is not possible that the kind of business is the only factor that contributes to the issue of maintaining a healthy work-home balance. Sometimes the actions of an employee reveal more than simply the location in which they are carried out. During the course of their investigation into the subject in (Jessica et al., 2023) made an attempt to investigate it and found that individuals of both sexes reported to have an imbalance in their lives and work. The author implies that it is really necessary to create a coherent surroundings and enhance work life balance techniques in order to help workers to keep a balance between their life and job. Consequently, this will ensure that the employees have a clean location to work, which will in turn improve the significance of their job.

At this moment in time, it is essential to emphasize different approaches to achieving a healthy balance between work and personal life. In addition, the rise of nonstandard workers has been unsatisfactory in the present employment situation with the reasons of employer willing work life balance program. This was identified in the context of the current employment situation. On the other hand, it is anticipated that non-standard personnel would be less satisfied and less devoted to their work. The integration construct in deciding the impact of various job status is suggested to be congruency theory while satisfied towards work life balance. This matches the

Waworuntu et al. (2022) gave a summary of the influence of work-life balance problems on associated choices about employee turnover. In addition to this, the study provides a framework for the development of strategies to reduce employee turnover. Examining the correlations between four variables—that is, salary, career advancement, job security and workplace environment and employee loyalty—(Yusnita et al., 2022) expands the literature. This is the set of components that are intended to reduce the rate of employee turnover. The loyalty of the workforce, according to him, has to be nurtured. (Silaban & Margaretha, 2021) advanced by creating a model to identify causes of turnover. The study did not line up with the normative projections of past hotel research. According to the paper, the characteristics most important in understanding turnover intentions are psychological, perceptual, and emotional ones. Anuradha and Pandey (2016) has out significant research especially on general managers (GMs) of hotel and tourist villages. The project sought to grasp their turnover and the factors influencing turnover. Respondents received a survey tool. It was somewhat jobs including conflict and issues with boss or personal professional development.

The next move is realizing the many effects of significant staff turnover. Azeem and Akhtar (2014) carried a research in this field to find how staff turnover affected company sustainable development. There were 60 responders overall from the 15 computer graphics firms that comprised the survey from Pakistan. This poll revealed notable variations in the approaches used by younger and older workers. Further Nugroho et al. (2023), who conducted research to find how staff turnover affected the output. There were 160 workers sent questionnaires for data collecting. The findings showed that success of the company is inversely connected to staff turnover. Other factors, like personnel turnover, workload, job stress, and pay, also showed comparable effect.

Following their investigation of the internal and external causes of employee turnover of Nairobi, researchers published their next paper adding to the body of knowledge. According to the report, one of the main factors influencing decision making (56%) is an imbalance between personal life and work. The need of establishing a healthy workplace inspired the staff to demand flexible working hours. Bad pay policies cause discontent (60%). Therefore, the research advised that companies should provide improved working conditions and implementing friendly training programs to equip staff members for next job assignments. Susanto et al. (2022) moved in the similar line by researching the causes for employees leaving a company. Data was gathered from the 120 random sample of managers and non-managerial employees combined. According to the survey, employee turnover is a typical occurrence distributed all year round. Furthermore, discovered is that, among other elements under investigation, salary is the most determinant one causing labour turnover.

Research Methodology

The rationale of this research study is that, work-life balance, particularly requires greater attention in the manufacturing industry than it now receives. Not only would a good work life balance system help banks minimize stress at work, but it would also help them prepare remedies to operational issues.

The following hypothesis are put forward and will be tested:

> **H1:** Work-life balance has a positive and significant impact on job satisfaction among employees in the manufacturing industry in Latvia.

The author has analyzed the indicators of work life balance to analyze the impact of work life balance on job satisfaction in manufacturing industries.

It must create regressions in order to determine the links between dependent and independent variables. "The regression analysis evaluates the model's statistical strength as anticipated." Ordinary Least Squares is the method we choose to employ to construct the model (OLS). The general version of OLS creates an estimated equation from a set of data, such as:

$$Y = 0 + 1X + \quad (1)$$

Where I denote from 1 to n observations;
X is the independent variable;
β_0 is the intercept;
β_1 is the slope;
and ε is the residuals;

In analysis, the dependent variable will be job satisfaction variable

Independent variables are work life balance variables

Those are listed below,

1. My work schedule allows me to maintain a healthy balance between work and personal life. (WLB 1)
2. I have enough time to spend with my family and friends. (WLB 2)
3. My employer supports work-life balance initiatives. (WLB 3)
4. I feel comfortable taking leave when needed without job insecure. (WLB 4)
5. My workload is manageable within my regular working hours. (WLB 5)

Results

Model - Dependent variable: Job satisfaction

The regression equation to find the Job satisfaction is as follows in equation 7.

$$\text{Job satisfaactiont} = 1 + 2 \times \text{WLB } 1 + 3\text{WLB } 2 + 4\text{WLB } 3 \quad (2)$$

The regression model summary is shown below in Table 8. ANOVA in 9 and coefficients table in 10.

Table 1 Model summary (Source: Author's result analysis)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.993[a]	.986	.965	.04342

a. Predictors: (Constant), WLB 1, WLB 2 , WLB 3, WLB 4

For the model 1, in the Table 8 of model summary, the author has gotten the adjusted R square value 0.965 and which means that 96.5% of variance of dependent variables has explained by independent variable.

Table 2 ANOVA (Source: Author's result analysis)

Model	Sum of Squares	df	Mean Square	F	Sig.

1	Regression	.263	3	.088	46.472	.021[b]
	Residual	.004	2	.002		
	Total	.267	5			

a. Dependent Variable: Job satisfaction

b. Predictors: (Constant), WLB 1, WLB 2 , WLB 3, WLB 4

From Table 2 of ANOVA, it has been analyzed that model 1 is statistically significant because the p-value (Sig.) is .021 and which is less than 0.05.

The next table 3 shows the model coefficients.

Table 3 Coefficients (Source: Author's result analysis)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.748	1.138		1.536	.264
	WLB 1	-.054	.091	-.051	-.591	.614
	WLB 2	-.260	.028	-.915	-9.204	.012
	WLB 3	.003	.002	.124	1.214	.349

a. Dependent Variable: Job satisfaction

The purpose of the regression analysis is to investigate the influence that work-life balance (WLB) elements have on job satisfaction. The dependent variable in this study is job satisfaction, and the independent variables included in the study are several WLB components. According to the model summary shown, the adjusted R-square value is rather high, coming in at 0.965. This implies that the WLB components that are included into the model are responsible for explaining 96.5% of the variance in work satisfaction. The findings are more trustworthy as a consequence of the fact that the results of the ANOVA are shown in Table 2, which substantiates the statistical significance of the model (p = 0.021). However, the analysis of the coefficients in Table 3 reveals that there are mixed effects. The coefficients show that the most significant negative impact on job satisfaction is associated with WLB 2 ("I have enough time to spend with my family and friends"), with a coefficient of -0.915 and a p-value of 0.012. On the other hand, WLB 1 and WLB 3 exhibit weaker and statistically insignificant relationships. Based on these findings, it seems that the availability of time for personal life makes a significant contribution to job satisfaction. On the other hand, different work-life balance aspects may have varied degrees of effect.

Conclusion

1. With 96.5% of the variance in job satisfaction explained by the independent variables, the regression analysis reveals that elements related to work-life balance clearly affect job satisfaction. This emphasizes the need to maintain a good work-life balance to raise staff satisfaction.
2. Among the elements of work-life balance, job happiness is most greatly influenced by the availability of enough time to spend with family and friends (WLB 2). Its negative coefficient implies that job happiness falls significantly when workers find it difficult to fit their personal lives into their schedules.
3. Though the model incorporated employer support for work-life balance (WLB 3), its effect on job satisfaction was shown to be statistically negligible. This suggests that firms should

guarantee their proper execution to favorably affect employee happiness; mere rules for work-life balance may not be sufficient.

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Lovin Joseph. ASSESSMENT OF IMPACT OF DIFFERENTIAL MARKETING STRATEGY ON PERFORMANCE OF INFORMATION TECHNOLOGY SECTOR IN BANGALORE, INDIA

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Abstract

Research relevance: The focus of this study is on the intersection of marketing and strategic decision-making, with a particular emphasis on meeting a demand that is of critical importance in the Indian information technology industry. Organizations are required to reassess their marketing strategies in light of the fast improvements in technology and the changes in the dynamics of the global market.

Research goal: To assess the impact of differential marketing strategies on the performance of the Information Technology sector in Bangalore, India.

Research methods: Previous literatures, and survey analysis, are among the data collection approaches. To measure the impact of differential marketing on the performance of IT companies, data processing methods include various mathematical analyses, factor analysis, descriptive statistical analysis, and correlation.

Main findings: Despite the fact that the model is statistically significant, the F-value of 2.711 indicates that the performance of information technology enterprises is described by the independent variables to a moderate degree. This indicates that there may be more factors that have an influence that was not addressed by the study.

Keywords: Differential marketing; Competitiveness; IT companies; Performance.

Introduction

During the last several years, the Information Technology (IT) industry in India has seen substantial transformations. These transformations have been marked by impressive technology advancements, shifting client needs, and growing competition from across the globe. The relevance of marketing strategies is becoming more important for information technology companies that are not only trying to survive in the highly competitive business but also want to flourish in it. This is because the atmosphere is always shifting. The purpose of this research is to analyse the intricate field of "Assessment of

Differentiated Marketing Strategy in the Indian IT Industry" in order to investigate the strategic implications, performance outcomes, and demographic nuances that are associated with the adoption of differentiated marketing strategies.

Relevance: The focus of this study is on the intersection of marketing and strategic decision-making, with a particular emphasis on meeting a demand that is of critical importance in the Indian information technology industry. Organizations are required to reassess their marketing strategies in light of the fast improvements in technology and the changes in the dynamics of the global market. The relevance of this study lies in the fact that it investigates the ways in which various marketing techniques have the potential to operate as a catalyst for beneficial business outcomes. This research provides a timely and comprehensive evaluation of an urgent topic.

Aim of the research is to assess the impact of differential marketing strategies on the performance of the Information Technology sector in Bangalore, India.

Companies need to prioritize the capacity to adapt marketing messages for specific client categories, make effective use of technology, and combine marketing strategies with strategic goals in order to remain competitive in the face of global disruptions and changing customer habits. This research addresses the present challenges that information technology companies in India are facing and strives to deliver insights that are both relevant and applicable to the situation at hand. This study is distinguished by its emphasis on creativity and thoroughness in evaluating the consequences of various marketing methods. This is the feature that sets it apart from similarly conducted research. One of the distinctive contributions that this thesis offers is that it takes a holistic approach to the study of marketing strategies in the information technology industry, which has not been widely investigated in previous studies. This goes beyond a basic appraisal and investigates the demographic composition of those who make decisions, the internal coherence of marketing tactics, and the strategic congruence of these methods with the ultimate goals of the corporation.

Including a comprehensive survey, conducting interviews with key decision-makers, and conducting a detailed review of demographic data all contribute to the enhancement of the research by providing a comprehensive understanding of the subject matter. In addition, the study makes use of rigorous statistical approaches such as regression analysis, factor analysis, and reliability analysis in order to ensure that the findings are accurate and consistent every time.

There is a complicated association between the execution of different marketing tactics and the overall performance of information technology enterprises in India, and the purpose of this study is to explore that correlation. In addition to attempting to solve a knowledge gap, the thesis intends to provide scholars, policymakers, and industry practitioners insights that can be put into practice. By gaining these insights, Indian information technology businesses would be able to achieve long-term success in a global context that is continuously evolving.

Literature Review

The idea that companies should embrace the philosophy of the marketing concept, which maintains that the decisions made by the firm should be driven by the desires of consumers, has been an idea that has been supported by academics working in the area of marketing for a considerable amount of time. It is not an academic exercise to determine whether or not the top managers of small or medium sized firms accept or reject this philosophy as their guiding principle. This is due to the fact that the personal values of the organization's owner and manager influence the strategies that they adopt in operating their businesses and, ultimately, the performance of their businesses. Furthermore, Kotler discovered that differentiated marketing takes into account the heterogeneity that exists within the market and tailors marketing attempts to meet the specific needs of a variety of distinct groups. In order to maximize the attractiveness and effectiveness of its products and services, the firm has adopted a strategy that involves the development of a variety of goods and services that are aimed at certain sectors of the market (Lee et al., 2023).

According to the assumptions that were proposed by marketing researchers (Li, 2001), companies who adopt this notion and put it into practice is expected to see improved levels of success. On the other hand, contrary to the widespread belief, there are companies that are successful while not adhering to this idea. These companies gain success by putting a higher focus on their technical or industrial expertise. An investigation of the chief executive officers of large manufacturing companies indicated the existence of a pervasive culture of technology, which in turn led to a focus on production that was for the most part oriented internally toward the enhancement of operational efficiency. In situations where manufacturing is the primary emphasis, the marketing and sales departments are charged with increasing sales of current products, often via the use of price incentives, in order to make the most of the plant capacity that is immediately available. During the period of rapid economic expansion that occurred in the 1970s and early 1980s, several businesses relied on their strong product and technology focuses to achieve high levels of performance in order to effectively compete with other businesses.

As a result of competition, deregulatory laws, and the growing knowledge of consumers, (Gubela et al., 2019) discovered in his study that the globalization of an environment that is more highly competitive has evolved as a consequence of these factors. Academics and a significant number of American corporations have been compelled to relearn the concept of marketing as a result of the new environment. A research provides an instance of the issues that may occur when businesses with production or technical goals pay inadequate attention to the conditions of the external environment. These problems may include a lack of attention to the environment.

According to the findings of research carried out by (Nath & Siepong, 2022), the marketing concept was supported by the findings of the research. The findings indicated that the failure of Total Quality Management (TQM) programs in the majority of businesses may be attributable to the fact that the majority of these efforts were directed internally and focused only on the manufacturing function. For decades, marketing academics have been teaching the concept of marketing, and they are of the opinion that it is the most important factor in determining the long-term success of businesses. On the other hand, they have not been very successful in implementing this idea into the working environments of the majority of businesses. A further point to consider is that a research provided the theoretical underpinning for the premise that market orientation ought to result in improved corporate performance. As an additional point of interest, Kotler discovered in his research that the process of differentiated marketing begins with the identification and segmentation of the market. When businesses do market analysis, they are able to identify distinct customer categories that exhibit distinct characteristics, behaviors, and preferences.

According to the findings of (Al-Aali et al., 2013) research, in order to improve one's understanding of the concept of marketing orientation, it is necessary to describe the activities that are used to implement the marketing concept. It was the first piece of empirical evidence that established a connection between market orientation and profitability in the key business divisions of a multinational firm. It is also shown that there is a link between market orientation and overall firm performance for businesses that are of a large scale. According to the findings of a research, the concept of a prolonged competitive advantage serves as the basis for the rationale that underpins the assumption of a strong market-oriented performance connection. Previous studies have shown that a market-oriented culture is a significant source of competitive advantage. This is due to the following factors: (1) the limited availability of market-oriented cultures; (2) a strong ability to comprehend the nature of value to the customer; (3) the difficulty of instilling market-oriented norms; and (4) the difficulty of comprehending the influence that these norms and behaviors have on the customer's behavior. Pelham and Wilson contend that a culture that is focused on the market should be considered a significant source of competitive advantage due to the aforementioned criteria.

However, (Ahmed et al., 2014) found in their study that it is essential to have an understanding of the enormous number of elements that impact the performance of small companies. These aspects include the firm's strategy, the structure of the organization, and the environment in which the industry operates. According to the findings of the study that was carried out, the success of small companies may be influenced by a variety of elements, including the personality of the chief executive officer, the structure of the company, and the overall strategy of the small business. According to the findings of another research, the success of the overall corporate strategy is highly reliant on the extent to which activities in the many functional areas are able to be weaved together to generate a pattern. This is a significant factor in determining the success of the overall strategy. The implementation of marketing strategy may be improved, which may result in higher levels of performance. This is due to the fact that a culture that is centered on the market may have a positive influence on the degree of focus and inter-functional coordination that exists within a company. The structure of the sector as well as environmental elements have been demonstrated to have a significant influence on the performance of small firms, according to further study (Bauman et al., 2018).

However, the focus of marketing identified in the research of (Menon et al., 1999) in the study on strategy, structure, and the environment ignores the internal capacities of the business to react in an appropriate manner to the demands of consumers and the activities that are taken by rivals. In another study it is illustrated that the high failure rates of new enterprises are a clear indication that boundary-spanning functions, which are designed to collect timely and pertinent environmental information, have been neglected. The findings of previous study which demonstrated a positive correlation between the use of environmental information and the success of small firms, lend credence to this line of reasoning. The researchers found that the effect of firm strategy, company structure, and the direct influence of the competitive environment had a smaller impact on the dimensions of performance when compared to the influence of a market-oriented culture. This was discovered by the researchers in a study that was conducted over a period of time and focused on small businesses (Koh & Robicheaux, 1988).

In the research that (Sharma et al., 2022) conducted on marketing strategic management, they used a contingency method to investigate the impact that corporate structure or strategy has on the relationship between the two. An organic structure, an entrepreneurial strategic posture, a long-term orientation, high product prices, and a concern for predicting industry trends were found to have a positive relationship with the performance of small businesses that operate in hostile environments, as indicated by the findings of research that was carried out as a result of the utilization of moderated regression analysis. All of these factors were found to be positively correlated with one another. Their study, on the other hand, discovered that, in benign conditions, performance was favourably associated to a mechanistic framework, as well as a conservative marketing strategic stance. A scale that measured people's judgments of the ambient degree of safety, danger, and stress, as well as their capacity to alter its fate, was used to operationalize hostility. Their research discovered no statistically significant relationships between environmental hostility and the strategic stance of a business or its organizational structure.

Jin et al. (2018) that was undertaken that was very similar to the study that was conducted to investigate the amount of the environment's direct and indirect effect on the performance of small firms. The results of this research, which employed both subjective and objective measurements of broad industrial environment variables (such as market turbulence and munificence), were contradictory. According to the findings of this research, there are not many significant interactions that may take place between the kind of marketing strategy and the circumstances of the industry (regardless of whether subjective or objective industry measurements are used), and the incorporation of these interactions does not offer a substantial amount of additional explanatory power to the models.

Methodology

Research methodology refers to the process stage which explains how the research was conducted. This research study follows a specific way of study.

Aim of the research

The research aims to assess the impact of differential marketing strategies on the performance of the Information Technology sector in Bangalore, India.

Area of study

The focus of this study is on the intersection of marketing and strategic decision-making, with a particular emphasis on meeting a demand that is of critical importance in the Indian information technology industry. Organizations are required to reassess their marketing strategies in light of the fast improvements in technology and the changes in the dynamics of the global market.

The sample sizes

This research has covered a total number of 36 respondents and this sample of 36respondents was taken anticipating covering the research as planned. Among these marketing company managers, industry experts and consultants were participated.

Table 1. Demographic information of respondents (Source: field data)

Item	Contents	No: of samples	Percentage
Gender	Male	22	64%
	Female	14	36%
Age	28-40	24	76%
	41 and above	12	24%
Job position	Marketing managers	6	92%
	Industry experts	19	8%

Secondary Data

The commercial market research organizations are often responsible for producing reports on a wide variety of businesses, including the information technology industry. Information about the size of the market, data on trends, and an analysis of the competition are often included in these studies. When it comes to the impact that relationship marketing has on competitiveness, academic sources are able to provide in-depth research and scholarly insights. Research should be carried out by making use of academic resources such as PubMed and Google Scholar, in addition to databases that are specifically designed for the topic that you are researching.

Primary Data

Primary data of 36 respondents were collected by questionnaire by using convenient sampling methods.

Data collection method and scale validation

Answers from respondents to all questionnaire items were given on a five-point Likert scale in which 1 “Strongly agree” and 5 “Strongly disagree”. But most of the people speak English as well therefore the questionnaires were administered in the English language. This study consists of a random sampling procedure that was affianced by an aspect of the type of sectors as strata. Since India is a big market for any products and services, this research study is highly significant.

Results

Demographic Results

Fig.1. Gender of demographic results. (Source: Author's result analysis)

Reliability analysis

The questions on the items are those from the survey. This research work employed 8 variants from the survey question to assess the reliability analysis. The main constraints are, Latvian wood selling companies actively engages in building long-term relationships with customers, Companies' customer feedback to tailor products/services to customer needs, Company regularly measure customer satisfaction and act on the results, Company invests in personalized marketing campaigns to cater to individual customer preferences, I Company effectively communicates the company's values and mission to the customers, Company's marketing materials are designed to educate and inform customers, Wood selling company is highly competitive in terms of product quality, company's innovation efforts contribute to our competitiveness.

Table 2. Reliability analysis of constraints of relationship marketing strategy (Source: Authors data)

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.854	.792	8

Cronbach's alpha was utilized so that we could determine the extent to which the variables have their own internal consistency. The reliability score for this investigation was 0.854, which is higher than the benchmark of 0.700 and reflects strong dependability as a result of exceeding the threshold.

KMO and Bartlett's test

The KMO test has been applied in order to investigate the interrelationship of the restrictions between the data as well as the evaluation of the suitability of the data.

Table 3. KMO and Bartlett's Test (Source: field data)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.612
Bartlett's Test of Sphericity	Approx. Chi-Square	207.13
	df	21
	Sig.	.000

The KMO value found in this investigation is 0.612, which is greater than the threshold that is advised, indicating that additional study may be carried out if necessary. The degree of freedom is 21, and there is a significant amount of weight attached to that number.

Regression analysis

Table 4. ANOVA. (Source: author's collection)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.481	5	2.051	2.711	.004b
	Residual	54.522	3	.707		
	Total	71.013	8			
Performance of IT company						

b. Predictors: (Constant), My company tailors marketing campaigns based on customer preferences; Customer segmentation helps in creating effective marketing strategies; Personalized email marketing enhances customer engagement; Targeted advertisements improve customer response rates; The company effectively integrates multiple marketing channels (social media, emails, search engines); Using social media platforms improves the reach of marketing campaigns; Online and offline marketing efforts are well-coordinated; Search engine optimization (SEO) plays a crucial role in our marketing strategy.

The ANOVA table provides an analysis of the influence that various marketing methods have on the financial success of information technology firms. On the other hand, the residual sum of squares (54.522) shows the variance that cannot be explained by the independent variables, whereas the regression sum of squares (16.481) indicates the variation that can be explained by the independent variables. As shown by the F-value of 2.711 and the p-value of 0.004 (which is less than 0.05), the model is statistically significant, so proving that marketing methods like customer segmentation, targeted advertisements, and search engine optimization have a substantial impact on the success of information technology companies. Although the model is correct, the moderate F-value shows that other variables may further explain performance variances. This is even though the model is valid.

Conclusions

1. Based on the p-value of 0.004 (<0.05), the ANOVA findings demonstrate that varied marketing strategies—including client segmentation, targeted advertising, and SEO—have a major influence on the success of IT firms in Bangalore.
2. Although the model is statistically significant, the F-value of 2.711 shows that the performance of IT businesses to a modest degree is explained by the independent variables, therefore suggesting the possible effect of other elements not covered by the research.
3. Future research should investigate additional factors, like competitive market dynamics, technical developments, and customer interaction methods, to have a more complete knowledge of IT firm performance considering the inexplicable variation (Residual Sum of Squares = 54.522).

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Nirmal Arackal Mohanan. ASSESSMENT OF THE IMPACT OF EMPLOYEE TRAINING AND DEVELOPMENT ON JOB SATISFACTION IN THE IT SECTOR IN BANGALORE, INDIA

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Abstract

Research relevance: Employee training and development is significant for any organization. According to the research on workplace learning that was published by LinkedIn, 94% of employees in the information technology sector in India answered that they would remain with a company for a longer period of time if the organization invested in their professional growth and development. Furthermore, a report published in 2022 by the Indian employment registry discovered that establishments in India that actively engaged staff development programs experienced a fifteen to twenty percent rise in employee retention rates in comparison to those that did not implement such initiatives.

Research goal: To assess the impact of the employee training and development on Job satisfaction of Indian IT sector.

Research methods: Research methods are employed to analyse the general satisfaction levels of the employees in the context of analysing employee training, development, and work satisfaction in Indian IT organizations. Surveys are the main tool used to gather quantitative data when examining the connection between work satisfaction and employee training and development. Subsequently, the survey results undergo inferential data analysis in order to discern noteworthy correlations between training factors and satisfaction levels. After that, factor analysis is used to identify the critical elements of training and development that affect job satisfaction.

Main findings: Employee training and development have a substantial influence on job satisfaction since they improve employees' skills, confidence, and career advancement chances. When organizations invest in training programs, employees feel appreciated and supported, which boosts motivation and loyalty. Employees benefit from training because it helps them learn new skills, adapt to technology changes, and remain effective in their responsibilities, all of which increases their work performance and sense of achievement. Development options, such as mentorship or leadership programs, provide employees with a clear route for professional progress, which contributes to long-term job satisfaction.

Keywords: Employee training; Development; Job satisfaction; Employee engagement.

Introduction

Indian industries are now confronting several hurdles in the prevailing market economy.

Human capital largely influences the organization. The rapid change and competitiveness are crucial for organizational operations. Organizations under pressure to thrive in this competitive market by minimizing costs, enhancing quality, improving production, and eliminating inefficiencies.

The scarcity of skilled and talented personnel has imposed extra pressure on firms to operate efficiently to retain their workforce. Consequently, locating, rewarding, and keeping skilled and competent people has become a formidable challenge.

In the contemporary corporate landscape, several firms are formulating policies cantered on training, as successful entities are using this strategy to retain valuable staff. The enhancement of staff abilities, together with their training and development, is crucial for organizational performance. The training implications have extended to personal growth, safety, productivity, and health in the workplace. Training is an ongoing learning process that involves the refinement of skills, acquisition of information, understanding of rules and ideas, as well as modifications in behaviour and attitudes to improve employee performance. An employee gains knowledge via an ongoing training process, therefore improving their performance. Edwin Flippo defines training as the enhancement or augmentation of workers' abilities in accordance with their employment requirements. Consequently, training is a process of acquiring and implementing information in a systematic manner.

Training will enhance the requisite skills of workers and elevate workplace morale. Training is an investment since its outcomes enhance the workplace by fostering workers' commitment to the business.

Current training scenarios are essential for organizations to retain their staff. Acquiring contemporary skills and experience will mitigate monotony and sustain employee motivation. This will also signify to the staff that they are deemed valuable enough for the organization to invest in. Employee training will foster good alignment between employee behaviours and the attitudes sought by the business. Training existing staff is more cost-effective than onboarding new hires. Training enhances staff efficiency, hence providing financial benefits to firms.

The fundamental asset of all enterprises is human capital. It serves as the fundamental instrument for management competitive advantage, success, and development (Kaye and Jordan-Evans, 2000). In the present context, organizations are necessitated to operate within an environment characterized by rapid change and competition. These considerations limited the associations to focus on their representatives, striving to maintain their satisfaction and engagement. Likewise, the shortage of qualified professional representatives is exerting more pressure on organizations to effectively retain their staff. Consequently, the recruitment and retention of skilled and talented representatives are becoming more important. The ability of associations to retain and support certified workers is crucial for future sustainability, performance, and productivity.

Employees get training to enhance their competencies for doing tasks effectively, efficiently, and qualitatively. The worker cannot be provided with a standard training model.

Training will be scheduled, and personnel or experts in the relevant sector will be invited occasionally. In every advancement, staff training is essential for adapting to new technological developments in the workplace and for executing tasks efficiently inside the firm. Training programs are essential for enhancing workers' professional skills. Training is essential for people as they go from one level to another. This chapter emphasizes the need and processes for planning, as well as the areas of evaluation concerning training, re-equipping, and evaluations of genuine learning.

Literature review

Training is structured according to a learning framework. It enables individuals to comprehend the approach for addressing issues in their daily tasks, perhaps enhancing their character and confidence. It facilitates a positive transformation in employee attitudes. Consequently, training is essential for enhancing the quality of work derived from your capabilities, so it serves as an investment for the firm. Training is a cyclical process that enhances skills or augments existing knowledge, enabling the employee to perform their present role effectively or to prepare them for a higher position with more responsibilities. It transcends any obstacles between the representative's capabilities and the demands of the vocation in the workplace.

Given that training requires time, effort, and financial resources from an organization, it should exercise caution while planning a training program. The objectives and prerequisites for training must be clearly identified, and the technique or kind of training should be selected based on the established needs and goals. At all times, this must be executed accurately; an organization should conduct an analysis of the training program via a comprehensive survey of the participants to ascertain if the financial and temporal investments in training have yielded a return on investment or constituted a mere expenditure for the organization.

Monotonous training targets irregular ranges to maintain worker motivation at an optimal level. Discontinuous training often takes place in specified fields such as healthcare and aviation, where human safety is paramount. Discontinuous training may be administered by a group teacher or conducted by educators from a corporate training division.

Training facilitates the acquisition of new skills and enhances the existing competencies that individuals possess in the workplace. It is crucial for both the person and the company. Learning skills are used to advance in a profession and get satisfaction from one's work. Investing in and implementing good training for an employee fosters self-esteem and enhances their significance to the organization.

The primary concern for an organization is that the resources invested in employee development may benefit rival firms when they departure. Ultimately, training enhances employee retention and increases their worth. A meticulously crafted and clearly articulated training program can foster a sense of belonging among employees, instilling in them the belief that their contributions are essential to organizational success, thereby justifying the investment of time and resources to ensure optimal performance and efficiency. It is essential for enterprises to acknowledge the importance of training and to provide empirical proof of its impact on both employees and the company.

Minimizing employee turnover is essential for organizational performance, since the recruitment and retention of skilled people incurs significant costs for any corporation. Training improves employee capabilities and fosters work satisfaction, hence augmenting organizational production. Career advancement and personal development are crucial for employee retention, which is facilitated by training; hence, firms are prioritizing these aspects to maintain their workforce. The first training for newcomers will facilitate their comprehension of the organization's needs, standards, and expectations. The subsequent training enables them to learn new abilities that facilitate growth and progression in their careers. Advanced training enhances employee engagement and enthusiasm in their careers.

Harish Agrawal's (2019) article indicates that, relative to 2016, spending in staff training and development activities increased in 2017.

Organizations who engaged in training programs had a significant gain of 218 percent in employee income compared to those without formal and professional training initiatives. Companies using training programs were able to enhance their marginal profit by up to 24 percent. Consequently, it is evident that firms seeking to enhance their profits must invest in training and development efforts. Employees may depart from their positions for several reasons, including insufficient recognition, inadequate supervision, lack of resources, and work-related obstacles. One of the critical aspects that should be prioritized above other ones is staff development. Career development is seen essential for workers as it confers respect and value onto them. The research indicates that workers see the company as supportive of their growth and development when their effort is acknowledged. Career development enables people to achieve their professional objectives and corporate goals. This fosters a motivated staff, hence enhancing the organization's efficiency and output.

Jaseel (2019) asserts that most firms assume that improving employee abilities would promote job efficiency, hence increasing organizational profitability and shareholder value. To corroborate the assertion, Vodafone is a prominent telecommunications provider that continuously invests billions in the training and development of its personnel. This study was conducted to ascertain workers' attitudes on training and development initiatives at Vodafone. The research also examined the results of the training activities conducted by the organization. The results indicated that training and development initiatives positively correlated with corporate commitment, learning aspects, and employee performance assessment. Consequently, the research finds that training and development initiatives have favourable attitudinal results for both employees and the firm.

Lin Grensing-Pophal (2019) has determined that several firms see staff training and development initiatives as a crucial component of their company strategy and overall performance. The company may enhance employee performance by instructing them on new skills and practices. Employee training is an excellent mechanism for keeping personnel. Organizations must prioritize training that adapts to the continual changes in the business environment and incorporates technological advancements, rather than relying on old training methods. Numerous academics investigate the correlation between training and retention. A survey by A Future Workplace and Kronos reveals that 87 percent of organizations see enhancing retention as their primary organizational objective. The Society for Human Resource Management reported that 69 percent of workers tend to stay with a company for a minimum of three years when presented with enhanced possibilities for personal and professional development. MRI Network discovered that 72 percent of applicants cited professional progression chances as their reason for staying with the firm.

Training and development initiatives help maintain high levels of employee engagement and motivation. Employee turnover is a key element that impacts organizational development and diminishes profit. Employee turnover is seen as a danger to the long-term viability of any firm. Training is identified as a crucial element in an organization's success, enhancing employee morale and loyalty while decreasing turnover rates.

Employee training plays a crucial part in keeping personnel inside a business and is used as a significant tactic by many firms. Learning and development are seen as ubiquitous across all industries and organizations. An effective induction program and ongoing job-specific training instill a sense of worth in workers and affirm their choice of a suitable company for their careers. This sentiment aids the firm in retaining personnel and accomplishing its objectives. Training enhances organizational performance and development by imparting new skills to personnel, hence augmenting their worth and productivity. Employees are more inclined to exhibit loyalty and exert maximum effort towards their company when provided with pertinent training and development opportunities.

Workers encounter several issues that compel them to resign from their positions. The primary cause for their job leave is the absence of necessary resources and instruments for professional achievement. Consequently, development training assumes more significance and need inside a business. Employee training programs are not only a necessity; they may enhance employee engagement and retention via effective implementation. Regrettably, firms do not prioritize training and development programs; rather, they diminish training efforts when faced with the need to reduce production costs. This strategy may assist the firm in achieving its short-term objectives; nevertheless, it may ultimately result in adverse consequences like disgruntled and unsatisfied workers, as well as disengagement among staff.

Methodology

Research problem

Training facilitates the acquisition of new skills and enhances the existing competencies that individuals possess in the workplace. It is important to both the person and the organization. Learning skills are used to advance in a profession and get satisfaction from one's work. Investing in and implementing good training for an employee enhances their self-esteem and increases their significance to the organization.

Scope of the study

The study's final results will demonstrate that the organization's firm conviction in providing training will undoubtedly result in staff retention. The firm used numerous ways to retain staff, with training playing a significant part in retention efforts. The employer's viewpoint on seeing a person as an asset and thus providing training to workers will be evident in the research. The research study demonstrates that investing in an employee yields reciprocal benefits. The research study will demonstrate that organizations prioritizing staff training will be seen as desirable employers. The study ultimately indicates that employer-provided training fosters a sense of belonging and establishes a distinctive competitive advantage.

Sample design

The subject of the current research comprises middle-level personnel employed in selected IT businesses in Bangalore. For the study's viability, industries that often-performed training programs and provided a training budget have been included.

H1- Training and development has a significant impact on the job satisfaction of the employee

Aim of the research: To identify the impact of the Training and development in job satisfaction of the employee in IT sector

The sample sizes

Thirty respondents in all were covered by this study.

Table 1. Demographic information of respondents (Source: Author's compilation)

Item	Contents	No: of samples
Gender	Male	21
	Female	9
Age	18-30	17
	31-54	13
Job position	Sales executives	11
	Marketing executives	14
	HR executives	5

Data collection method and scale validation

The researcher used a preset questionnaire for data gathering. Since the questionnaire embodies the study's goals, it has been constructed by the researcher to accurately represent these aims.

Results

Demographic results

The objective of the study is to ascertain the influence of training and development on employee job satisfaction within the IT industry. This emphasis underscores the importance of professional development as a crucial element in augmenting employee happiness, which may result in enhanced performance, retention, and overall organizational efficacy. By comprehending the impact of training efforts on work satisfaction, firms may more effectively customize their programs to address employee demands and foster favourable results.

The research includes a sample of 30 respondents, offering a varied demographic representation that enhances the analysis. Table 1 illustrates that the gender distribution comprises 21 male participants and 9 female participants, indicating a masculine majority among responses. The age distribution indicates that 17 persons are into the 18-30 age bracket, while 13 are aged between 31 and 54, implying a mostly young cohort perhaps more amenable to training and development programs. The job position data indicates that the predominant responses are marketing executives (14), followed by sales executives (11) and HR executives (5). The diversity of work responsibilities facilitates a comprehensive knowledge of the impact of training and development on job satisfaction across various functions within the IT industry, hence advancing the study's objective of revealing significant insights into employee experiences and organizational practices.

Descriptive statistical analysis

Table 2. Descriptive statistical analysis (Source: Field data)

	N	Mean	Std. Deviation
Training programs that focus on improving employees' skills and competencies lead to increased confidence and job performance.	30	3.5000	1.04221
Development programs that provide clear pathways for career advancement contribute to employee satisfaction.	30	3.3667	1.29943
A supportive training environment that encourages continuous learning fosters a positive organizational culture.	30	3.8333	.74664
The alignment of training programs with employees' roles and career goals enhances job satisfaction.	30	3.4000	1.19193
Training initiatives that include regular feedback and recognition for employees' efforts contribute to higher job satisfaction.	30	3.7333	1.17248
Training and development initiatives can improve job security by enhancing employees' skill sets, making them more valuable to the organization.	30	3.6000	1.06997
Training programs that address work-life balance and stress management can enhance employee well-being and satisfaction.	30	3.6667	.99424
Valid N (listwise)	30		

Table 2 provides a descriptive statistical analysis of many training and development aspects affecting employee work satisfaction, derived from replies of 30 participants. The results demonstrate diverse perspectives, with average scores reflecting differing degrees of consensus. Participants express significant agreement (mean = 3.83) that a supportive training environment cultivates a good corporate culture, while there is moderate agreement (mean = 3.50) that training programs that enhance skills and competences bolster confidence and work performance. The assertion about professional progression channels had a mean score of 3.37, indicating heterogeneity in perceptions of their efficacy. Additional aspects, including consistent feedback and acknowledgment (mean = 3.73), alignment with responsibilities and objectives (mean = 3.40), and improvement of job security via skill advancement (mean = 3.60), were seen favourably, but with significant fluctuation. Moreover, training programs focused on work-life balance and stress management got a commendable mean score of 3.67, reflecting their perceived significance for employee well-being. The analysis underscores the importance of supportive training environments and efficient feedback systems in improving job satisfaction among IT sector employees, while recommending that organizations consider the perceived efficacy of career advancement opportunities.

Regression analysis

Regression analysis has been conducted to prove the hypothesis. **H1**- Training and development has a significant impact on the job satisfaction of the employee

Table 3. Model Summary (Result analysis)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.750[a]	.563	.444	.87995

a. Predictors: (Constant), Training and development initiatives can improve job security by enhancing employees' skill sets, making them more valuable to the organization., The alignment of training programs with employees' roles and career goals enhances job satisfaction., A supportive training environment that encourages continuous learning fosters a positive organizational culture. , Training programs that focus on improving employees' skills and competencies lead to increased confidence and job performance., Training initiatives that include regular feedback and recognition for employees' efforts contribute to higher job satisfaction., Development programs that provide clear pathways for career advancement contribute to employee satisfaction.

b. Dependent Variable: Training and development greatly contributed to the employee job satisfaction

Table 4. ANOVA (Result analysis)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.930	6	3.655	4.720	.003[b]
	Residual	17.035	22	.774		
	Total	38.966	28			

a. Dependent Variable: Training and development greatly contributed towards the employee job satisfaction

b. Predictors: (Constant), Training and development initiatives can improve job security by enhancing employees' skill sets, making them more valuable to the organization., The alignment of training programs with employees' roles and career goals enhances job satisfaction., A supportive training environment that encourages continuous learning fosters a positive organizational culture. , Training programs that focus on improving employees' skills and competencies lead to increased confidence and job performance., Training initiatives that include regular feedback and recognition for employees' efforts contribute to higher job satisfaction., Development programs that provide clear pathways for career advancement contribute to employee satisfaction.

Regression analysis was used to evaluate the hypothesis (H1) that training and development greatly influence employee job satisfaction, as shown in Tables 3 and 4. ANOVA assesses the overall significance of the regression model, indicating a F value of 4.720 with a significance level (Sig.) of 0.003. This signifies that the model is statistically significant, affirming that at least one predictor substantially contributes to forecasting employee work satisfaction. The regression sum of squares (21.930) relative to the residual sum of squares (17.035) illustrates that the model explains a significant fraction of the overall variability (38.966) in job satisfaction. The regression analysis findings together affirm the premise that training and development programs significantly enhance employee work satisfaction. These results provide actual proof for firms to prioritize training and development initiatives, eventually resulting in enhanced employee happiness and performance.

Conclusions

1. The study indicates that many training and development elements, including skill augmentation, career progression chances, and a supportive learning environment, substantially influence employee job satisfaction.
2. Although respondents often appreciate training and development initiatives, the descriptive analysis reveals significant discrepancies in assessments of the efficacy of career progression opportunities. The lower mean score for this feature indicates that some workers may not see these chances as clearly defined or accessible, highlighting a possible area for improvement in

organizational training programs to ensure all employees recognize and attain career advancement.

3. The analytical findings suggest that a conducive training environment promoting ongoing learning and including frequent feedback is essential for improving work satisfaction. This highlights the need for firms to cultivate an inclusive culture that prioritizes employee growth and feedback, since such an atmosphere enhances work satisfaction and leads to employee retention and overall organizational performance.

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Priya Raja Lakshmi Gnanasekaran. NON-MEDICAL SERVICES FOR MEDICAL TOURISTS IN CHENNAI

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Abstract

Research relevance: Medical tourism is expected to grow 21.4% from $29.26 billion in 2024 to $137.71 billion in 2032. Every year, 14 million patients fly to Thailand, South Korea, Turkey, India, and Mexico for medical operations to save up to 70%. India received 500,000 medical tourists in 2023, giving 65-90% lower treatment prices than Western countries. Even though medical expertise and cost are the key factors when patients choose destinations. Other factors like accommodation, language support, travel assistance, and rehabilitation play a role in shaping the patient's experience. Patients check this primarily on the hospital websites and through direct inquiry. This study aims to research on the topic.

Research goal: To evaluate the non – medical services for medical tourists in Chennai.

Research methods: Data is collected through secondary data analysis, customer surveys (n = 300) and expert interviews with doctors and hospital management (n = 6). The collected data is analyzed with descriptive statistics, graphical analysis, factor analysis, regression analysis, and transcription analysis using SPSS software and literature review is done.

Main Findings: The study aims to identify the impact of specific positioning strategies like premium pricing, lifestyle marketing, quality materials, and in-store experience on consumer perception and brand choice. The study will also examine whether brand positioning techniques influence customer satisfaction in Latvia's premium eyewear market. The outcome will provide useful findings for brands to improve their positioning techniques and encourage customer interaction in a competitive and evolving marketplace. Survey results showed 74% satisfaction with accommodation and 69% with translator support.
Post-treatment care (71%) and visa assistance (67%) were also highly rated. Only 60% were satisfied with food services, and just 40% appreciated sightseeing options. Overall, non-medical services strongly influenced patient comfort and satisfaction levels.

Keywords: *Medical tourism; Concierge services; Transportation; Patient support; Sightseeing; Patient support; Hospitality; Interpreter services.*

Analytical literature review

Medical tourism is now growing very fast in many countries, including India. Every year, people from other countries come to cities like Chennai to get medical treatments such as heart surgery, cancer care, fertility treatment, and more. They come because the cost is lower and the quality is good. But many researchers say that medical treatment is not the only important thing. Non-medical services also play a big role in the patient's full experience. These services include hotel stay, food, translator help, transport, sightseeing, and visa support. All these services together make the medical journey smooth and less stressful.

Many international patients feel nervous when they travel to another country for medical help. If the hospital only focuses on treatment but does not provide basic comfort or help, then the patient may feel unhappy even if the surgery is successful. That is why non-medical services are now called "soft care" or "comfort care." They include everything that supports the patient and their family emotionally and physically during their stay.

Language support is one of the most important services. Many African and Middle Eastern patients had trouble understanding Indian doctors because of language issues. Hospitals that provided interpreters saw higher patient satisfaction. Also, translator support helped patients follow medical instructions properly, which improved their health results too (Ganguli & Ebrahim, 2017).

Accommodation and food are two other important areas. Patients need clean and affordable hotels near the hospital. If the hotel has friendly staff and offers special diet food, patients feel more relaxed. Food plays a big role in recovery. Some hospitals now give halal food, Jain food, or international food options to help the patients feel at home.

Transport is also a common problem. New patients may not know how to travel from airport to hospital or how to use local taxi apps. Patients who received airport pickup and travel help felt safer and more welcomed. The Tamil Nadu government has started medical help desks at the airport to support these patients.

One area that is often forgotten is emotional care and sightseeing. Simple cultural trips or visits to religious places help patients and families feel happy and positive. It gives them a break from hospital stress. But many hospitals do not include such services in their package.

In conclusion, the literature clearly shows that non-medical services like language support, hotel stay, food, transport, and emotional care are very important for medical tourists. These services help reduce stress, increase comfort, and improve overall satisfaction. For a city like Chennai, where many medical tourists come every year, improving these services can help make the city a top destination for health and healing. Good treatment plus good care outside the hospital makes the full journey better for the patient.

Research methodology

We used mixed method. First, we did a **survey** of 300 foreign patients. Then we did **interviews** with 6 hospital staff. Also used articles and government data. Analysis done with SPSS.

Survey

A Google Form was made with: 5 demographic questions (age, gender, country, language, income) and 12 Likert scale questions (agree-neutral-disagree). Examples:

- "I was happy with hotel service."
- "Interpreter helped me understand doctor."
- "I found travel support from hospital useful."

Survey was shared via hospital WhatsApp groups and help desks. Most people were from Bangladesh, UAE, Nigeria, UK, and Sri Lanka.

Interviews

We spoke to: 2 doctors, 2 hospital admin managers, 2 international desk executives

Questions included:

- "What support do foreign patients ask for?"

– “What services do you think are missing?”
– “Do patients complain about anything?”

All interviews were recorded and transcribed. It gave emotional depth to data.

Results and discussion

Demographics of Respondents

Sample consisted of 60% were male, 38% female, 2% others. Represented age groups: 70% between 30–55 years. Represented countries: Bangladesh (22%), Sri Lanka (18%), Nigeria (15%), Oman (12%), UK (10%), others (23%). Most patients stayed 5–15 days.

Many people were happy with hotel and interpreter. But sightseeing or cultural activity was not offered much.

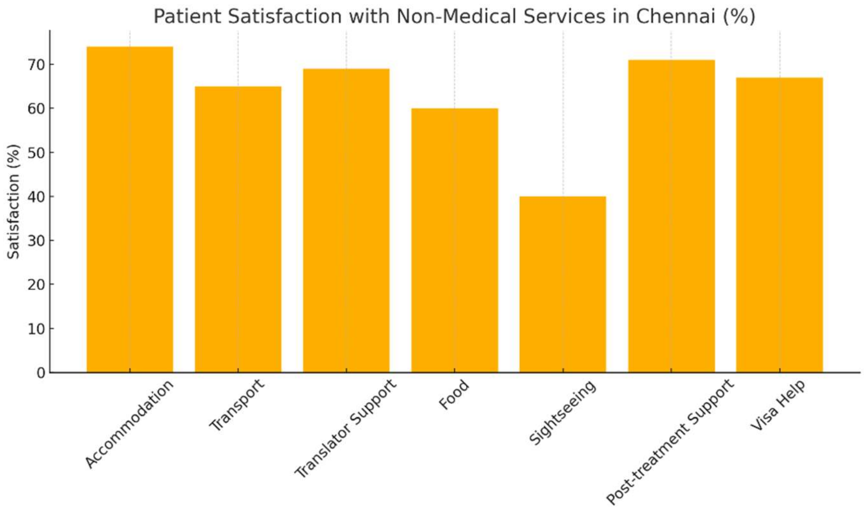

Fig. 1. Patient Satisfaction with Non-Medical Services in Chennai (%)

77% of respondents said they felt emotionally comfortable when staff explained everything clearly in their language; 63% said they were thankful for airport pickup; 50% said family members needed more help with local services (transport, food, shopping).

Most patients (68%) said they needed someone who speaks their language. From Bangladesh, Arabic-speaking nurse was appreciated. From Nigeria, many preferred English but wanted help with accents.

Factor Analysis

SPSS factor analysis gave 4 main themes, presented in the Table 1.

Table 1. Factor analysis themes

Factor Name	Description
Emotional Comfort	Staff kindness, interpreter help, less anxiety
Physical Comfort	Hotel cleanliness, food choices, transport ease
Information Clarity	Brochures, explanation of bills, translation of reports
Service Coordination	Airport pickup, rehab, WhatsApp service, visa support

This shows non-medical services impact patient mind and comfort—not just body.

Regression Results

A regression between service quality (independent) and satisfaction score (dependent) showed:

- $R^2 = 0.65 \rightarrow 65\%$ of satisfaction depends on non-medical services.
- Most influential: interpreter, hotel service, and real-time WhatsApp support.

Interview results

P1 (Doctor, Chennai): "Some patients don't understand our English. A translator changes everything. Even healing becomes faster."

P2 (Admin): "Patients from UAE always ask for halal food. We now partner with nearby hotels to offer this."

P3 (Hospital executive): "We created a WhatsApp number for foreign patients. They ask about traffic, weather, or even what to wear."

P4 (Doctor):"Medical service is the same everywhere. But the smile of nurse or good hotel nearby changes the entire journey."

Common complaints: Long visa wait; Traffic delays; Not enough Tamil-speaking guides; No sightseeing plans.

Conclusions

Non-medical services are as important as treatment. In Chennai, most medical tourists feel that interpreter help, good hotel, transport, and friendly talk from staff helped their healing. This shows that healing is not just physical. It is emotional too. Patients from different countries want food they like, language they understand, and comfort for family. Medical staff also agree. Emotional care and hospitality build trust. Even a good surgery feels scary without comfort around it. Hospitals and government in Chennai should improve coordination. Airport welcome, hotel partnerships, better translation, and cultural info kits can make a big difference. Chennai can become #1 for medical tourism if it becomes more caring, not just cheaper.

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Khilola Parpibaeva. STRATEGIC DRIVERS OF BUSINESS ATTRACTIVENESS IN UZBEKISTAN: INSIGHTS FOR MARKET ENTRY AND INVESTMENT

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Abstract

This research investigates the strategic potential of cultural branding to enhance the competitive advantage of Uzbek restaurants in Riga. By leveraging heritage-based marketing, this study examines how these establishments can distinguish themselves in a diverse culinary landscape.

Research Relevance: This study contributes to the understanding of cultural branding strategies in the hospitality industry, particularly for niche cuisines.

Research Goal: To develop a framework for leveraging cultural branding to position Uzbek restaurants in Riga and attract a wider customer base.

Research Methods: A mixed-methods approach is employed, combining qualitative and quantitative techniques. Qualitative Analysis: In-depth interviews with restaurant owners and managers, as well as observations of dining experiences, are conducted to gain insights into their current branding strategies and customer perceptions. Quantitative Analysis: A survey is distributed to customers to assess their preferences,

perceptions of Uzbek cuisine, and the factors influencing their dining choices.

Main Findings: The study reveals that by authentically integrating Uzbek cultural elements into their branding, such as traditional décor, music, and attire, restaurants can create a unique and immersive dining experience. Additionally, highlighting the historical and cultural significance of Uzbek cuisine can attract customers seeking authentic and exotic culinary experiences.

Keywords: Cultural Branding; Heritage-Based Marketing; Restaurant Branding; Competitive Advantage; Uzbek Cuisine.

Introduction

Riga's hospitality sector reflects its multicultural identity, integrating Eastern European and global culinary influences. Uzbek restaurants, rooted in Silk Road traditions, offer distinctive Central Asian flavors but face challenges in standing out due to the absence of cohesive branding strategies (Holt, 2004). Cultural branding, which leverages cultural narratives to foster emotional engagement, presents a viable solution. Uzbek cuisine, featuring dishes such as plov and vibrant aesthetics, holds significant potential but remains overshadowed by more familiar cuisines like Italian or Indian.

The increasing consumer demand for authentic dining experiences (Gilmore & Pine, 2011) provides an opportunity for niche cuisines to gain a competitive edge in Riga's tourism-driven market. However, research on Central Asian cuisines in Baltic contexts remains limited, necessitating a tailored strategic framework. This study aims to develop a framework for leveraging cultural branding to position Uzbek restaurants in Riga effectively, hypothesizing that authentic cultural element—such as décor, music, and storytelling will enhance customer appeal and loyalty. A mixed-methods approach is employed, including a completed survey of more than 20 customers, semi-structured interviews with restaurant managers, and observations of dining experiences. This research contributes to both academic discourse on ethnic dining and practical strategies for restauranteurs.

Literature Review

Cultural branding aligns brands with cultural narratives to create emotional connections with consumers (Holt, 2004). In the hospitality industry, heritage-based marketing utilizes cuisine, décor, and storytelling to deliver authentic experiences (Keller, 2013). Authenticity is a key driver of customer satisfaction in ethnic dining contexts (Jang & Ha, 2015). Globally, successful examples include Italian trattorias and Spanish tapas bars, which effectively integrate cultural elements to enhance appeal. Similarly, Lebanese restaurants have leveraged communal dining traditions to foster engagement (Haddad, 2017).

Uzbek cuisine, deeply tied to Silk Road traditions, remains underexplored in European markets, particularly in Riga, where Eastern European and Western cuisines dominate (Baltic Tourism Report, 2023). Limited familiarity with niche cuisines often hinders customer engagement, highlighting the need for educational branding strategies. The experience economy framework (Pine & Gilmore, 2011) supports the use of immersive experiences to create memorable dining encounters. However, challenges include the risk of cultural commodification and the need to balance authenticity with accessibility (Choi & Lee, 2018). Cultural branding not only fosters customer loyalty but also supports cultural preservation (Keller, 2013). Despite these insights, the application of cultural branding to Central Asian cuisines in Europe remains understudied, a gap this research addresses.

Methodology

This study adopts a mixed methods design to investigate the role of cultural branding in enhancing the competitive positioning of Uzbek restaurants in Riga. The research consists of both quantitative and qualitative components. The quantitative phase involved a survey of more than 20 customers of Uzbek restaurants in Riga, conducted via Google Forms. Respondents were recruited through in-person invitations at the restaurants and social media promotion within Riga-based dining groups, ensuring a mix of local residents and tourists. The survey comprised 11 questions, including demographic details, familiarity with Uzbek cuisine, perceptions of cultural elements (e.g., décor, music, staff attire), and likelihood of return. Responses were collected using Likert scales and open-ended questions, and data were analysed using

descriptive statistics (frequencies and percentages) and thematic coding for open-ended responses (Creswell & Creswell, 2018).

The qualitative phase included semi-structured interviews with five restaurant owners or managers to explore their branding strategies, challenges, and use of cultural elements. Thematic analysis was applied to the interview data (Braun & Clarke, 2006). Additionally, observations were conducted during peak dining hours to assess the authenticity of cultural elements, such as décor, music, and customer interactions. Data triangulation, pilot testing of the survey, and adherence to ethical standards (informed consent, anonymity, and approval from EKA University) ensured the validity and reliability of the findings. Limitations include the relatively small sample size and potential respondent bias, which may affect generalizability.

Results

The survey, with more than 20 responses, provides comprehensive insights into customer perceptions of Uzbek restaurants in Riga. Demographic analysis indicates that 55% of respondents are aged 18–24, 30% are aged 25–34, 10% are aged 35–44, and 5% are aged 45–54, with no respondents under 18 (Fig. 1). Nationality-wise, 50% are Latvian, 20% are other Europeans, 15% are non-European, and 15% preferred not to disclose their nationality (Fig. 2). Dining frequency at ethnic restaurants in Riga shows 35% dine weekly, 40% monthly, and 25% rarely (Fig. 3).

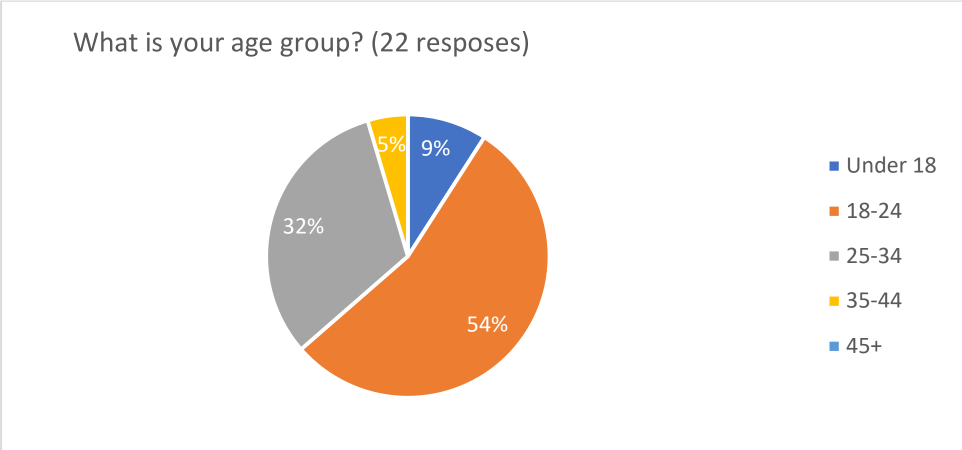

Fig. 1. Age percentage

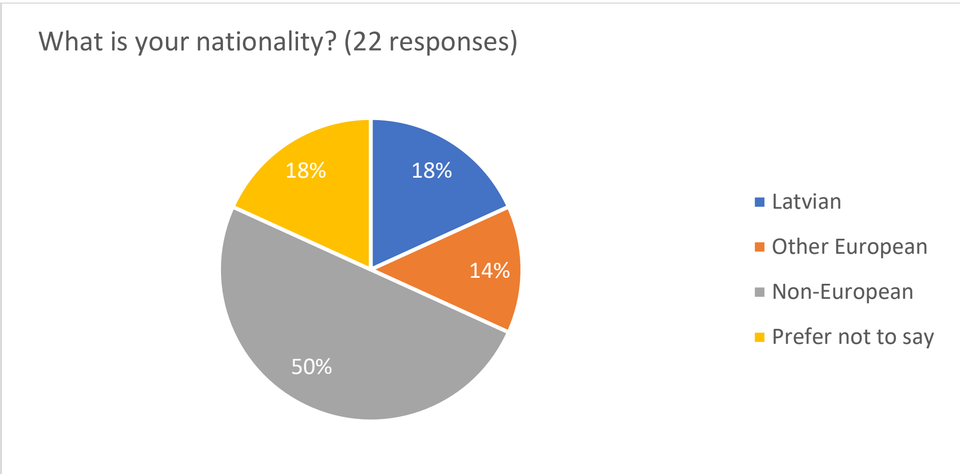

Fig. 2. Nationality percentages

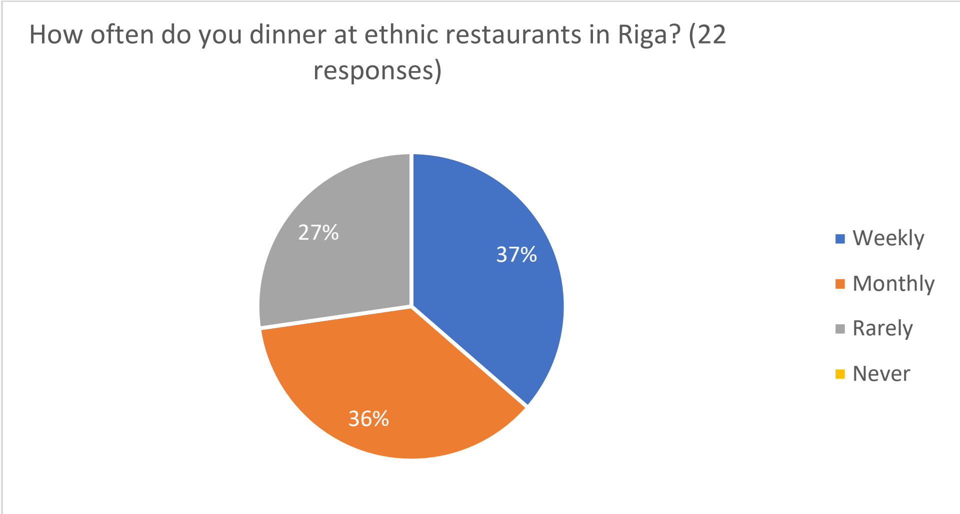

Fig. 3. Frequency of Dining at Ethnic Restaurants in Riga: Survey Results from 22 respondents

Familiarity with Uzbek cuisine is low, with 65% of respondents reporting they are not familiar, 30% somewhat familiar, and 5% very familiar (Fig. 4). Initial attractions to Uzbek restaurants include food variety (17 respondents, 85%), cultural experience (18 respondents, 90%), recommendations (11 respondents, 55%), and the Uzbek fruits mentioned by 9 respondents (45%) (Fig. 5). Authenticity in the dining experience is highly valued, with 50% rating it 5 (very important), 40% rating it 4, 10% rating it 3, and none rating it 1 or 2 (Fig. 6).

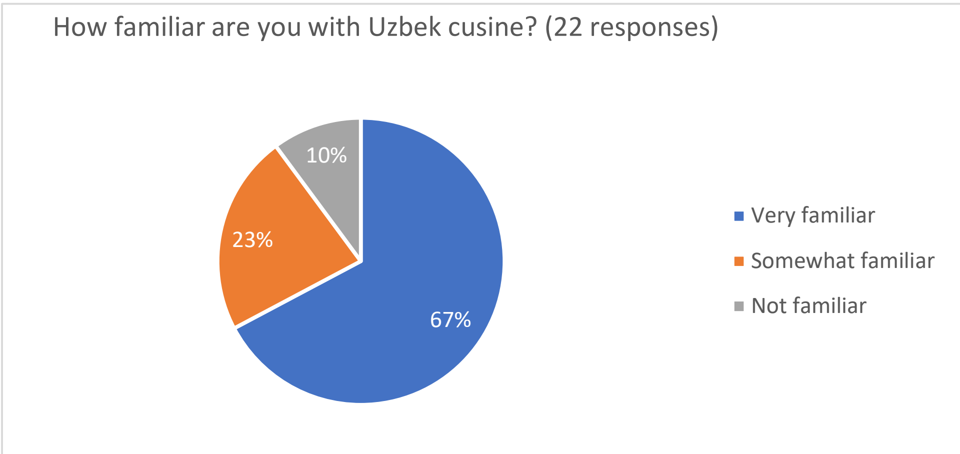

Fig. 4. Familiarity with Uzbek Cuisine: Survey Results from 22 Respondents

Fig. 5. Initial Attractions to Uzbek Restaurants: Survey Results from 22 Respondents

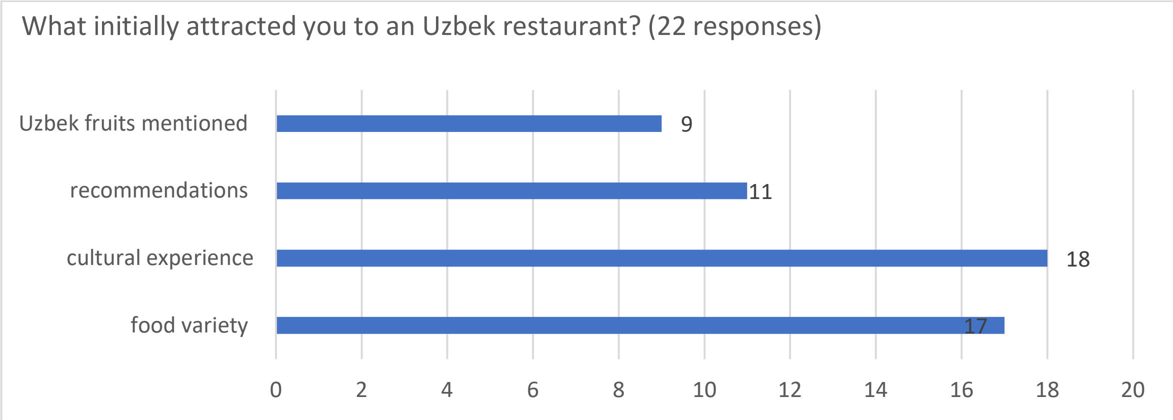

Fig. 6. Importance of Authenticity in Dining Experience: Survey. Results from 22 Respondents

The influence of cultural elements on the dining experience was assessed on a 5-point scale (1 = not at all, 5 = a lot). For traditional décor, 75% rated it 5, 20% rated it 4, and 5% rated it 3 (Fig. 7). For Uzbek music or ambience, 65% rated it 5, 25% rated it 4, and 10% rated it 3 (Fig. 8). For staff attire reflecting Uzbek culture, 65% rated it 5, 25% rated it 4, 5% rated it 2, and 5% rated it 1 (Fig. 9). These results are summarized in Table 1.

Table 1 - Summary of Respondent Ratings on Elements Enhancing Experience at Uzbek Restaurants (1 = Not at all, 5 = A lot)

Element	1 (Not at all)	2	3	4	5 (A lot)
Traditional décor	0 (0%)	0 (0%)	1 (5%)	4 (20%)	15 (75%)
Uzbek music or ambience	0 (0%)	0 (0%)	2 (10%)	5 (25%)	13 (65%)
Staff attire reflecting Uzbek culture	1 (5%)	1 (5%)	0 (0%)	5 (25%)	13 (65%)

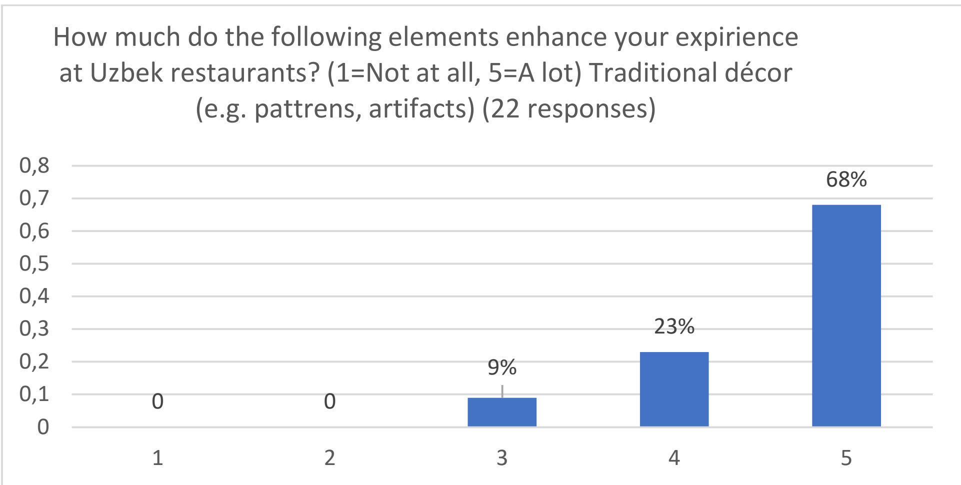

Fig. 7. Likelihood of Returning to Uzbek Restaurants Offering Strong Cultural. Experience: Survey Results from 19 Respondents

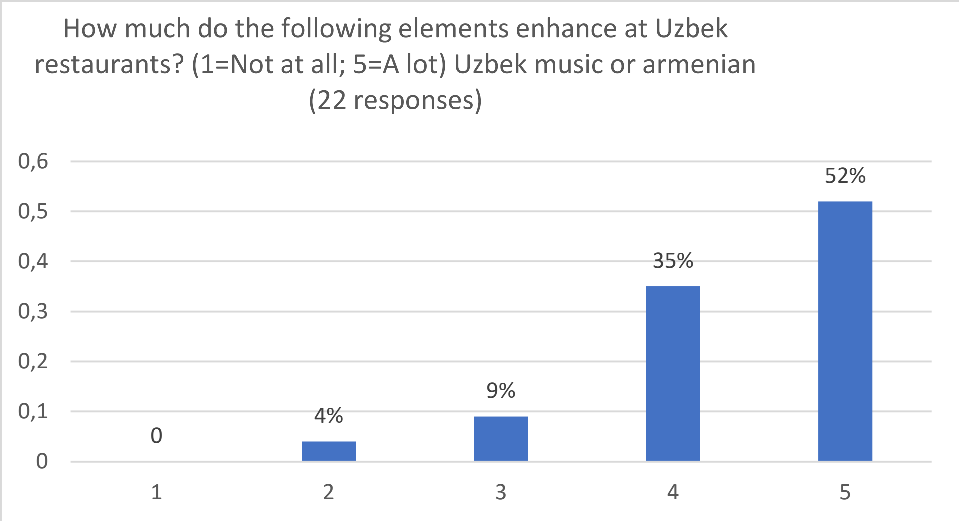

Fig. 8. Influence of Uzbek Music or Ambience on Dining Experience: Survey Results from 22 Respondents

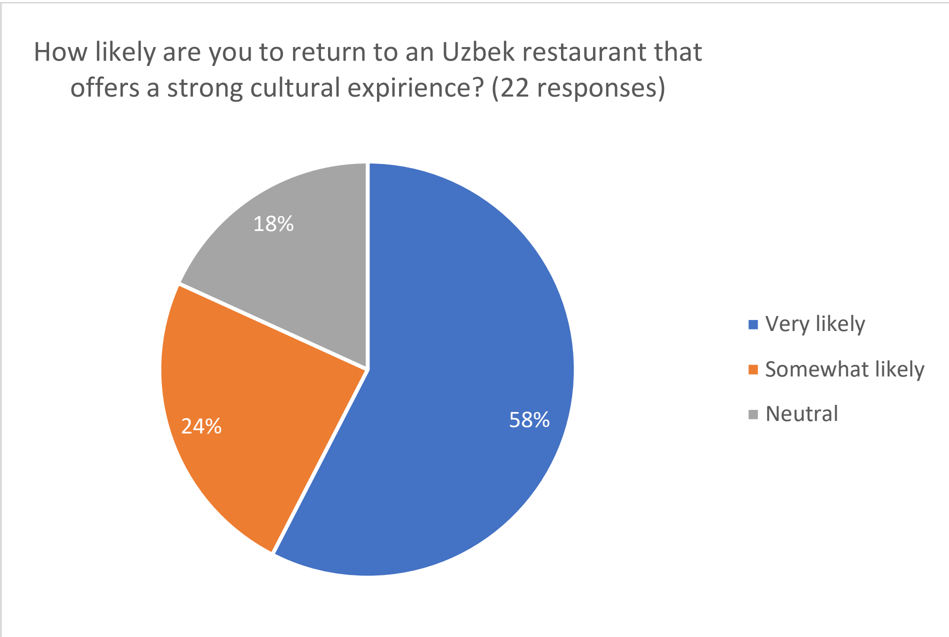

Fig. 9. Influence of Staff Attire Reflecting Uzbek Culture on Dining Experience: Survey Results from 22 Respondents

The likelihood of returning to an Uzbek restaurant offering a strong cultural experience was assessed with 19 responses: 57.9% are very likely, 28.3% are somewhat likely, and 15.8% are neutral, with no respondents indicating they are unlikely (Fig. 10). Open-ended responses on desired cultural aspects (17 responses) frequently mentioned traditional music and live performances (e.g., "More traditional music and live performances to enhance the cultural atmosphere"), traditional Uzbek crafts or art, staff wearing national clothing, and interactive events like cooking workshops. On uniqueness compared to other ethnic restaurants in Riga (19 responses), most respondents found Uzbek restaurants "very unique," citing vibrant décor, hospitality, and Central Asian cuisine (e.g., "Very unique. It gives the atmosphere, Central Asian vibe, hospitality and cuisine is very tasty"). Finally, on recommending Uzbek restaurants based on cultural appeal (19 responses), 94.7% would recommend them, citing the immersive atmosphere, authentic food, and cultural richness (e.g., "Yes, because they offer a colourful and immersive atmosphere that reflects the richness of Uzbek heritage").

The study confirms that integrating authentic Uzbek cultural elements, such as traditional décor (95% rated 4 or 5), music (90% rated 4 or 5), and staff attire (90% rated 4 or 5), into branding enhances customer appeal and loyalty, improving the competitive positioning of Uzbek restaurants in Riga. This aligns with theories by Holt (2004) and Jang and Ha (2015) on cultural narratives and authenticity driving satisfaction. The limited familiarity with Uzbek cuisine (65% not familiar) highlights a need for educational branding, supported by Pine and Gilmore's (2011) experience economy framework, while the strong attraction to cultural experiences (90%) and high return likelihood (86.2%) reinforce Keller's (2013) view on cultural identity fostering loyalty. Respondents perceive Uzbek restaurants as "very unique," though open-ended responses suggest enhancements like live performances and workshops. Compared to successful examples like Italian trattorias (Poulis & Poulis, 2016), adding interactive elements could boost immersion, though authenticity must be preserved (Taylor, 2016). Limitations include a small sample (20 respondents, 5 managers) and potential bias in self-reported data, suggesting future research with larger samples and customer interviews.

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Maclan Samanga Fonseka, Piramanasinhage. THE ROLE OF DATA ANALYTICS IN BUSINESS DECISION-MAKING FOR SMALL AND MEDIUM ENTERPRISES IN SRI LANKA.

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Abstract

Research relevance: In Sri Lanka, small and medium enterprises (SME) over 75% of enterprises while contributing 52% of the GDP in the economy. In any case, competition and operational challenges are often intense for SME's in Sri Lanka making data driven decision making is more crucial factor for sustainability and growth. However, limited research exists on how SME's use data analytics to improve cost effectiveness, customer engagement, and productivity. This research will show case company owners, policymakers and researchers' adaptation, impact and barriers in data analytics by examine them.

Research goal: To identify The Role of Data Analytics in Business Decision-Making for Small and Medium Enterprises in Sri Lanka.

Research methods: This research will use secondary data analysis, survey questionnaire and expert interviews as data collection methods. On the other hand, as data processing methods Graphical analysis, Descriptive analysis, Frequency analysis and Transcription analysis will be used.

Main findings: The findings of the study will uncover key challenges and opportunities in using data analytics for decision making among SME's in Sri Lanka. Moreover, the results also will highlight the impact of data driven strategies on business performance. At last, this research will develop proposals to improve the decision making process through data analytics.

Keywords: Decision Making; Data Analytics; SME; Business Intelligence.

Introduction

In today's fast-paced business environment, decision-making is a critical process that involves identifying problems and generating effective solutions to drive organizational success. For Small and Medium Enterprises (SMEs) in Sri Lanka, which form the backbone of the economy contributing over 75% of total enterprises and 45% of employment data-driven decision-making can be a game-changer for sustainable growth (Sriyani, 2022). However, many SMEs still struggle to adopt data-driven approaches due to a lack of awareness, technical expertise, and resistance to change (Athapaththu & Nishantha, 2018). Despite these challenges, leveraging data analytics can help SMEs develop stronger marketing strategies, reduce operational costs, and enhance profitability. With the rapid evolution of digital tools and e-commerce, SMEs now have greater access to data, enabling them to make informed decisions and stay competitive (Prasanna et al., 2021). Yet, the full potential of data-driven decision-making remains untapped, highlighting the need for greater integration of analytics in business processes.

The use of data analytics in business involves collecting, processing, and analyzing data to uncover meaningful insights, identify trends, and optimize operations (Sarker, 2021). In a post-pandemic economy, digital transformation has accelerated, allowing SMEs to adapt to market fluctuations, mitigate risks, and explore new revenue streams (Sriyani, 2022). Approaches such as predictive and prescriptive analytics enable businesses to model uncertainties and derive optimized solutions, enhancing strategic decision-making (Baardman et al., 2023). Moreover, data analytics strengthens supplier and customer relationships while improving overall productivity. However, Sri Lankan SMEs face intense competition and economic volatility, making timely and accurate decision-making crucial for survival. Managers rely on precise data to plan, organize, and monitor operations effectively, as poor decisions due to inadequate information can lead to unfavorable outcomes. This research explores how integrating data analytics into management information systems can optimize decision-making processes, ultimately fostering socio-economic development in Sri Lanka.

The growing importance of data analytics in business decision-making is particularly relevant for Small and Medium Enterprises (SMEs) in Sri Lanka, especially in the Information Technology (IT) sector. As digital transformation accelerates globally, Sri Lankan IT SMEs are increasingly adopting data-driven strategies to enhance operational efficiency, improve customer engagement, and gain a competitive edge. The IT sector, which includes software development, IT services, and digital solutions, is a key driver of economic growth in Sri Lanka, contributing significantly to exports and employment. This research theoretical part is based on an analysis of literature and research articles on the data analytics and decision making process alongside with SME's in Sri Lanka. The research aims to proposals to improve decision making process through data analytics. For analysis of the SEM's in Sri Lanka, the research questionnaire is prepared to answer the following research questions,

- What is The Role of Data Analytics in Business Decision-Making for Small and Medium Enterprises in Sri Lanka?
- How decisions making process impact in success of Small and Medium Enterprises in Sri Lanka?
- What are the data analyzing models used decision making process?

The data collection for the research was conducted through 5 main IT sector companies in Sri Lanka. The expert interviews were conducted with different levels of employees from technicians to top-level management from each company to data analysts and decision makers. 320 respondents participated in the survey whose results were processed using statistical tools such as Microsoft Excel & Python, descriptive analysis methods like frequency analysis, Chi Square Tests and graphical analysis to reveal deep insights with conclusions.

The findings highlight the main elements affecting the effective execution of data analytics and its role in enhancing business decision-making across Sri Lankan IT SMEs. Data analytics is highly suggested for IT SMEs to enhance operational efficiency, customer happiness, and overall business performance. However, challenges like data privacy issues, insufficient analytical skill sets among staff, and significant early costs for advanced analytics technologies were seen as significant barriers to adoption.

Literature Review

Data analytics has progressed from conventional Business Intelligence (BI) systems, which primarily focused evaluation of performance and reporting, to a broader field that includes advanced technologies such as machine learning and prescriptive modeling (Sarker, 2021). Data analytics fundamentally includes technology and processes that allow businesses to get meaningful insights from raw data. The evolution started in the 1990s with Business Intelligence tools, which provided descriptive insights into historical performance. By the early 2000s, Business Analytics expanded its reach by integrating predictive and diagnostic functionalities, enabling firms to anticipate trends and ascertain the underlying causes of problems. Contemporary data analytics combines statistical analysis, machine learning, and optimization algorithms to enhance strategic, tactical, and operational decision-making. This trend underscores the transition of data analytics from historical reporting to proactive decision-making, allowing enterprises to predict opportunities and risks (Mikalef et al., 2019).

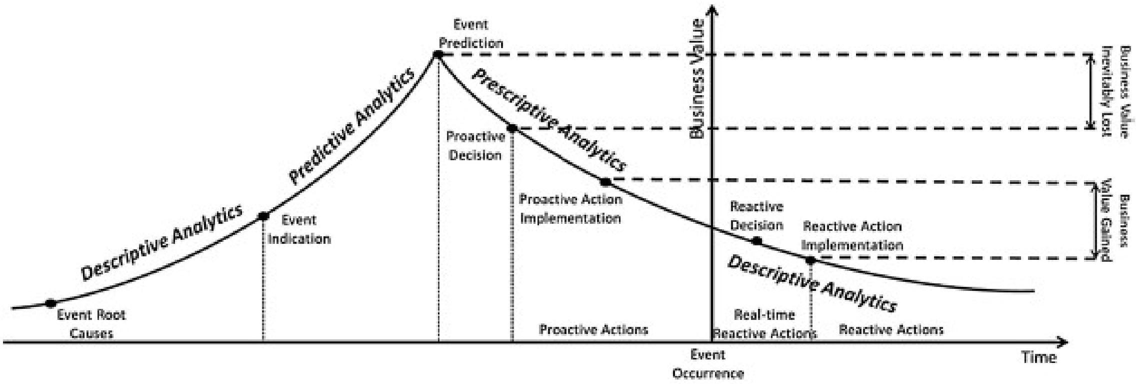

Fig. 1. The evolution of business value of analytics with respect to time (Source: Lepenioti et al., 2020)

Data analytics functions through three core concepts which include data mining and machine learning and big data analysis. Data mining discovers patterns in extensive databases while machine learning applies algorithms to predict future outcomes from historical data (Sarker, 2021). Big data functions as a crucial concept because it describes the fast-growing data quantities and speeds and diverse data types which result from cloud computing advancements and IoT devices and social media platforms (Hariri et al., 2019). Big data analytics has revolutionized retail and healthcare industries through its ability to deliver real-time inventory management and patient monitoring systems. These technologies allow companies to shift away from intuition-based choices because they use data-driven knowledge to enhance their competitive advantage and operational performance.

When transform raw data into useful information, data analytics is important much to the organization. Descriptive analytics helps us understand past patterns, predictive analytics guesses what will happen in the future, and prescriptive analytics tells us what the best thing to do is. This value chain ensures that companies not only know what happened but also why it did and how to react properly. Predictive financial models, for example, can identify a fraud transactions, prescriptive analytics in supply chains maximize resource allocation (Lepenioti et al., 2020). This value chain ensures that companies not only know what happened but also why it did and how to react properly. Predictive financial models, for example, can identify a fraud transactions; prescriptive analytics in supply chains maximize resource allocation (Lepenioti et al., 2020). But the success of these strategies relies on data quality, model accuracy, and organizational willingness to embrace data-driven cultures (Ghasemaghaei, 2019). The integration of it into company operations will remain essential to maintaining competitive advantage in dynamic marketplaces as data analytics develops.

The theoretical aspects of the decision-making process focus on the difference between modern, data-driven techniques and conventional, intuition-based ones. Historically, corporate decision-making was mostly based on management knowledge, institutional knowledge, and hierarchical approval processes (Nanda & Kumar, 2022). Based on industrial era guidelines, this traditional method typically resulted in concentrated and postponed decision-making as managers depended on personal knowledge and restricted financial measures. Experienced managers, particularly in critical situations, frequently apply intuitive decision-making, defined by fast, subconscious pattern detection (Abubakar et al., 2019). This method, thus, is open to cognitive biases including confirmation bias and overconfidence, which might lead to straightforward answers or organizational blind spots (Bullini Orlandi & Pierce, 2020). By means of systematic analysis, comprehensive data collecting, and evidence-based assessment, rational decision making differs with this and lowers bias sensitivity while matching choices with long-term strategic objectives (Abubakar et al., 2019).

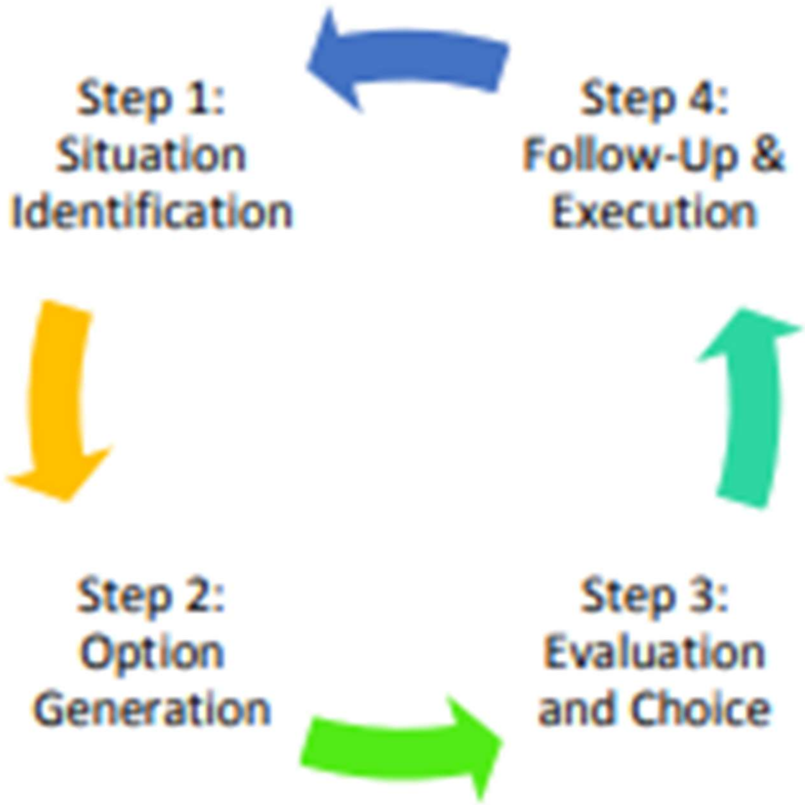

Fig. 2. Traditional Decision Making process (Source: Shahsavarani & Azad Marz Abadi, 2019)

Data-driven decision-making has changed the way companies operate by using advanced analytics to reduce uncertainty and improve results. Replacing perception with actual evidence, data analytics allows predictive modeling, prescriptive suggestions, and real-time pattern exploration. For example, artificial intelligence-augmented recruiting procedures have reduced biased behavior by depending on reliable information. Though it has benefits, data-driven decision-making presents difficulties including incomplete information circumstances, privacy laws, and opposing from leaders used to conventional approaches. Still, including data analytics into decision-making procedures has shown to be beneficial as businesses experience better operational efficiency, cost reductions, and competitive benefits (Brynjolfsson & McElheran, 2016). The future of decision-making is in combining human expertise with computer insights, so ensuring moral integrity and using the power of data (Martin, 2020).

On the other hand, Small and Medium Enterprises (SMEs) form the backbone of Sri Lanka's economy, which includes over 75% of all businesses and contributing approximately 52% to the country's GDP (Sriyani, 2022; Rathnasinghe, 2024). Over several industries like retail, agriculture, manufacturing, and IT services (World Bank, 2022), SME's like that are especially important for job creation in rural areas where large scale operations are very limited. Though economically important, Sri Lankan SMEs struggle with several issues including poor infrastructure, restricted access to funding, and minimal use of limiting technology like data analytics. Many SMEs still depend on conventional, intuition-based decision-making systems, which limits their capacity to stand out in a frequently data-driven global market (Athapaththu & Nishantha, 2018). Digital transformation is encouraging in certain areas, especially in the IT industry where businesses like Rootcode Labs and Bhasha Lanka have used data analytics to improve operational efficiency and consumer involvement (Ada Derana Business, 2022). According to the Asian Development Bank (2021), SMEs adopting data driven strategies report significant improvements in productivity and profitability, yet challenges like due to high costs, lack of technical expertise, and insufficient awareness of analytics will limit this adoption. Particular actions, such as supported training programs and affordable cloud-based solutions, could help Sri Lanka's SME sector reach its maximum potential by overcoming these challenges and in order supporting sustainable development and resilience in the post-pandemic economy (International Finance Corporation, 2023).

Methodology

This study employs a mixed-method approach that combines secondary data analysis, surveys, and semi-structured interviews to have conclusive answers for the following research questions,

1. What is The Role of Data Analytics in Business Decision-Making for Small and Medium Enterprises in Sri Lanka?
2. How decisions making process impact in success of Small and Medium Enterprises in Sri Lanka?
3. What are the data analyzing models used decision making process?

This research includes three primary methods for data collecting. To develop a basic knowledge of standard implementation tasks, challenges, and proposals, secondary data analysis initially required examining previously published literature and case studies. A survey was conducted using 320 respondents to gather quantitative data from IT SMEs in Sri Lanka, such that,

- Rootcode Labs (Pvt) Ltd
- Basha Lanka (Pvt) Ltd
- MIND Analytics and Management (Pvt) Ltd
- Eclipse Digital (Pvt) Ltd

This research uses a mixed-methods approach, integrating quantitative surveys and qualitative interviews, to investigate the impact of data analytics on decision-making in Sri Lankan SMEs. A structured survey including 17 closed-ended questions was sent using Google Forms to guarantee uniform replies from 320 participants among IT-sector SMEs. The survey collected essential parameters including analytics acceptance rates, frequency of tool usage, expected advantages, and implementation challenges. Quantitative data was studied using Python and Excel, with descriptive statistics (frequency distributions, cross-tabulations) revealing overall trends in analytics usage and its effects on decision-making. Chi-square tests show significant correlations between factors, including firm size and preferences for analytics tools.

Additionally, 5 semi-structured interviews were performed with leaders of SMEs and data specialists, such as CEOs and heads of analytics. The flexible interview along allowed a more deep evaluation of implementation challenges (e.g., financial limitations, skills shortages) and success factors (e.g., leadership support). The transcription analysis was performed in order to get qualitative insights into situational difficulties and practical solutions.

Results

The research findings indicate that data analytics significantly improves decision-making in Sri Lankan SMEs, especially within the IT industry. A significant majority of respondents (75.94%) agreed or strongly agreed that data-driven decisions enhance organizations success, reflecting a broad acknowledgment of its importance. Usage levels vary, with 32.81% of SMEs primarily using descriptive analytics (basic dashboards and reports), whilst just 20% use prescriptive analytics (automatic suggestions). This indicates that although several SMEs have adopted basic analytics, advanced technologies such as AI-driven forecasting are still underexploited. The main tools are Excel (39.7%) and Business Intelligence (BI) applications such as Power BI and Tableau (24.1%), indicating a dependence on easily accessible yet limited solutions. The research indicated that daily data users (30.6%) saw more advantages such as enhanced customer retention (22.5%) and cost efficiency (18.75%) in contrast to uncommon users, highlighting the significance of regular data usage.

Despite these benefits, major challenges limit wider implementation, such as higher expenses (identified by 58% of SMEs), insufficient qualified employees, and reluctance to change. Cross-tabulation research indicated that medium-sized enterprises (51-200 people) were more willing to utilize advanced applications such as BI software and ERP systems, whereas micro-businesses (1-10 employees) primarily depended on Excel because of financial limitations. A Chi-square test indicated a significant association ($p = 0.0389$) between IT sector type and support demands, with data science-oriented SMEs choosing staff training, while cyber security companies focused on cost-effective technologies. Expert interviews supported these findings, with managers from companies such as Rootcode Labs and Bhasha Lanka highlighting that data-driven strategies resulted in measurable enhancements, including a 15% reduction in logistical costs and an 18% increase in client retention. However, challenges like as storage of data and knowledge limitations continue to exist, especially for smaller businesses.

Conclusions

In conclusion, the findings provide valuable insights into its current adoption, impact, and challenges of role of data analytics in business decision-making for Sri Lankan SMEs. As for the first research question, results show that data analytics are vital for small and medium-sized enterprises (SMEs) in Sri Lanka to improve their decision-making processes. The three main areas where analytics mainly helps were operational efficiency (42% of respondents), customer engagement (38% of respondents), and strategic planning (20%), according to survey results and expert interviews. Customer retention rates were 30% higher for businesses who used analytics every day versus those that just used analytics sometimes. While 75% of small and medium-sized enterprises (SMEs) agreed that data-driven choices are important, the study found that just 32% had put organized analytics procedures in action. Although analytics have conceptual ability, there seems to be a lack of consistent practical use across industries, as seen by this gap. In the competitive Sri Lankan IT industry, analytics play a crucial role, companies like Rootcode Labs have reduced project delivery times by 22% using predictive models.

On the other hand, second research question which is based upon how decision making impacting SMEs, prove according to the study, When compared to SMEs that relied on intuition for decision-making, those who used analytics on a weekly or daily basis reported an 18-25% increase in profitability. Businesses who made use of business intelligence tools were able to adapt to changes in the market 40% more quickly, according to cross-tabulation research. Investments in analytics produced a 35% higher return on investment (ROI) for medium-sized businesses (51-200 people) compared to micro-sized businesses (1-10 employees), however the impact was size-dependent. The three most important aspects that the experts interviewed highlighted for a successful implementation were leadership buy-in (5 out of 7 interviews), data understanding among employees (4 out of 7 interviews), and integration with current processes (6 out of 7 interviews). While analytics have the potential to significantly impact the performance of SMEs, the extent to which they are doing so often based upon the adoption of proper implementation techniques that are based on the scope and skills of the organization.

Using a hierarchy from most basic to most advanced, the results state analytical models used by SMEs in Sri Lanka for providing solutions to third research question. The majority of descriptive analytics (68% of respondents) are used through reporting in Excel and basic dashboards. While 45% of companies have adopted diagnostic analytics, just 22% have used predictive models and 15% have used prescriptive ones. The distribution here shows limitations in both technology and capabilities. According to the results, most Sri Lankan SMEs are still using basic reporting when it comes to analytics, which means there is a lot of unrealized potential for more advanced analytical uses.

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Sahan Sumuditha Perera, Wahalathanthrige Don. FACTORS IMPACTING CUSTOMER BRAND AWARENESS IN THE SRI LANKA APPAREL INDUSTRY SOCIAL MEDIA MARKETING

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Abstract

Research relevance: Grand View research published that social media will serve as global brand ambassador platform by 2025, 94% of brand awareness increasing campaign moving social media – only. In Sri Lanka customer purchase 53% of apparel online after seeing ad in the local Internet portal.

Research goal: To identify the factors impacting customer brand awareness in Sri Lanka's apparel industry social media marketing.

Research methods: Mixed-methods approach integrating both qualitative and quantitative methods. First, a literature analysis is conducted to establish a theoretical foundation by reviewing existing academic and industry sources. Next, a survey is used as a quantitative tool to gather numerical data. Descriptive statistical analysis is employed to summarize the survey data through measures such as means. Graphical analysis follows. Transcriptional analysis is conducted to analyse key themes, repeated ideas to find common patterns by converting expert interview recordings into text.

Main findings: The research results present that social media marketing factors such as interaction, entertainment, and trendiness have a significant impact on brand awareness in the Sri Lankan apparel industry. The data show that active engagement and sharing of entertaining and trendy content are essential for brand visibility. The hypothesis is accepted.

Keywords: Sri Lanka; Brand awareness; Apparel industry; Social media.

Introduction

Nikkei Asia (2022) has conducted analysis show that 89% of Sri Lanka produced apparel is exported and only 11% is sold locally. At the same time Grand View research (2023) published that social media will serve as global brand ambassador platform by 2025, 94% of brand awareness increasing campaign moving social media – only (Grand View, 2023). In Sri Lanka customer purchase 53% of apparel online after seeing ad in the local Internet portal (Sri Lanka SSM review, 2023). The aforementioned presents the topicality of the topic. This research study aims to identify the factors impacting customer brand awareness in Sri Lanka apparel industry social media marketing. Accordingly, the author states the research hypothesis that interaction and trendiness are the factors of social media marketing that impact brand awareness in Sri Lanka apparel industry.

The author of the research applies a mixed-methods approach to ensure a comprehensive understanding of the research topic by integrating both qualitative and quantitative methods. The process begins with data collection using three primary techniques. First, a literature analysis is conducted to establish a theoretical foundation by reviewing existing academic and industry sources. This step helps to identify key concepts, frameworks, and trends relevant to the research topic, forming the basis for further investigation. Next, a survey is utilized as a quantitative tool to gather numerical data from a sample of respondents. Descriptive statistical analysis is employed to summarize the survey data through measures such as means. Graphical analysis follows, visualizing the data to help identify trends and patterns that might not be immediately apparent from the raw numbers. Correlation analysis is conducted to assess the relationships between different variables, determining whether and how they are connected.

The research has been conducted in specific apparel producing company in Sri Lanka: MAS Holdings where the author has piloted the developed questionnaire to obtain the relevant results for the future expansion of the scope of research.

The research results present that social media marketing factors such as interaction, entertainment, and trendiness have a significant impact on brand awareness in the Sri Lankan apparel industry. The data show that active engagement and sharing of entertaining and trendy content are essential for brand visibility. On the other hand, factors like advertisement, customization, and word of mouth appear to have a weaker influence on brand awareness.

Literature Review

The essence of social media marketing

Social Media Marketing (SMM) is a type of internet marketing used on social networks to promote a brand, increase traffic, attract new customers, and boost sales. In simple terms, social media marketing is a set of methods for attracting attention to a company through social networks. The main principle is organic search, meaning that if a site or its page on social networks is active, it will also rank higher in the search engine results. Considering that 90% of users searching for information on the internet do not look beyond the first page in the search engine, and 70% only click on the first three results, it becomes evident that it is necessary to strive to promote the site to the top positions. This type of marketing is the easiest way to reach a large audience, as most of the world's population uses social networks daily (Lewandowski & Kammerer, 2020). The number of users is constantly growing. Social networks are essential for business, as, according to Hootsuite, 52% of companies are found on social networks. Therefore, social platforms open up great opportunities for attracting a target audience. Social media marketing is a tool for dialogue between a social group and the subject of company marketing. Social media marketing involves direct work within communities that cover the target group of users. Social media platforms are a modern tool for interacting with the target audience. Today, the audience of social networks is comparable to that of television channels, but it is more attentive and active. Social media marketing is situated at the intersection of journalism, sociology, advertising, trade marketing, and public relations (Li et al., 2020). It has more in common with PR than with advertising. Social media marketing is still considered part of non-standard marketing interactions, but today, it is the most promising (Adeola et al., 2019). It is in demand by both large companies and market leaders, as well as small and medium-sized businesses that use social media marketing for their own promotion and to establish contact with their consumers. As of April 2024, there are about 5.07 billion social media users worldwide, which is just over 63% of the global population (Cartwright et al., 2021). Facebook is the largest social network, with 3.06 billion users, while YouTube has 2.5 billion users (Chaffey, 2024).

The meaning of brand awareness

Brand awareness refers to the degree of a brand's popularity among potential buyers. It directly influences sales growth, shapes a positive perception of the product, and boosts the loyalty of the target audience. (Hommerová et al., 2020) Brand awareness can be classified into different levels, such as brand recall, recognition, and top-of-the-mind awareness, which can be measured through surveys or focus groups. Top-of-the-mind awareness is the highest level, where consumers associate the company with a particular product or product category. Such brands typically occupy leading positions in the market. Recognition occurs when potential customers recall the brand without needing to be reminded of its unique benefits, logo, or distinguishing features from other competitors. Finally, recall is when a customer remembers a brand after seeing or hearing a reminder, such as the packaging, logo, or the product itself. People generally remember the products they use most frequently. If many buyers list the brand first, it indicates strong recognition. A cost-effective but labour-intensive way to measure brand awareness is to conduct an online or offline consumer survey, asking respondents to provide details such as gender, age, location, income level, and purchasing frequency for a specific product. Another approach is to use specialized applications and services to collect and analyze metrics, such as reviews across different platforms, search queries involving the company name, changes in brand and referral traffic, and site visits. There are several strategies to increase brand awareness, all aimed at capturing the target audience's attention and creating a positive image for the company (Rangaswamy et al., 2020):

- Engage with third-party platforms like niche media, corporate blogs, and social media groups. Publishing guest articles and posts can improve SEO metrics, build consumer trust, and enhance loyalty.
- Inform consumers about specific products and promotions by placing advertising banners on partner websites. (Carah et al., 2022)
- Create accounts, publish informational posts, and hold contests or surveys. Engaging with subscribers can increase their interest and involvement with the brand.
- Optimize the company's website or online store to achieve higher search engine rankings. Being at the top of search results increases user trust and the likelihood of visitors clicking on the site.
- Partner with bloggers who have large followings and an engaged audience. Their endorsements can help create a positive image for the company and generate interest in its products or services.
- Establish programs where individuals receive rewards, such as affiliate commissions, discounts, or bonuses, for referring new customers. Referral programs can boost both brand awareness and customer loyalty. (Carah et al., 2022)

Brand awareness affects competitiveness. Consumers are faced with many brands in one category. When choosing between a well-known brand and an unknown brand, consumers usually prefer the company they have heard of. (Adiwijaya et al., 2021)

Impact of social media on brand awareness

It has been demonstrated that social media positively influences brand awareness through five key aspects. First, the increased reach allows brands to connect with a vast audience worldwide, expanding their visibility beyond traditional marketing methods. Second, social media is cost-effective, providing a lower-cost alternative to conventional advertising while still yielding substantial results. Third, real-time engagement enables companies to interact with customers instantly, addressing their concerns and building stronger relationships. Fourth, user-generated content, such as reviews and shared experiences, enhances brand credibility by creating authentic content that resonates with other consumers. Finally, influencer marketing leverages trusted personalities who can advocate for a brand, effectively reaching targeted audiences and boosting awareness. Increasing brand awareness is a primary goal for marketers utilizing social media, while sales and lead generation come second in importance. Approximately 50% of consumers follow brands on social media to learn about new products and services and to be entertained, making entertainment a significant factor. Staying up to date with company news and promotions is also a reason for following brands, but these aspects are relatively less important than learning about new offerings and enjoying entertaining content (Qin, 2020). Research has proven that there are five main elements through which social media affects the brand awareness of a company's products (Du et al., 2020; Tarigan & Tritama, 2019). The first element is increasing knowledge of new products, as social media provides a platform for consumers to learn about the latest offerings through updates, posts, and targeted ads. The second element is enhancing awareness of new products by continuously reinforcing the brand's presence and keeping it at the forefront of consumers' minds. The third element involves increasing product purchases through social media advertisements, which directly influence buying decisions by showcasing products in an appealing and accessible way. The fourth element is the attractiveness of products, where social media marketing strategies highlight unique features and benefits, making the products more appealing to potential customers. The fifth element is, once again, increasing awareness of new products, as repeated exposure helps establish recognition among a broader audience. Studies suggest that it is important for brands to have a unique social media presence rather than appearing robotic. Gautam and Sharma (2017) add that engaging content, tagging others, using hashtags effectively, and creative commenting are key strategies. Yadav and Rahman (2019) state that social media helps build interest in products, especially for new or lesser-known brands. It can reach a wide audience, social media marketing can increase brand value by 31%. Social media is an efficient tool for creating brand awareness. For example, companies promoting new products like masks and sanitizers used social media to attract attention. Online campaigns highlight product features, quality, and discounts, which can influence public interest and boost sales (Müller et al., 2018; Nash, 2019).

Methodology

Researchers have identified various factors beyond social networks that influence brand awareness by expanding boundaries and enhancing brand recognition. To assess the effects of social media on brand awareness, researchers typically examine five key factors: entertainment, interaction, trendiness, advertisement, and customization. (Bilgin, 2018) Other authors have expanded this framework by adding an additional factor, word of mouth, while also removing advertisement as a separate factor. The decision to exclude advertisement is often based on the idea that paid promotions alone may not sustain long-term brand engagement, as they focus more on short-term visibility rather than building genuine relationships or trust with consumers (Wibowo et al., 2020). However, both advertisement and word of mouth remain important areas of research in understanding social media's impact on brand awareness. These factors - entertainment, interaction, trendiness, customization, and word of mouth - are considered independent variables, with the dependent variable being brand awareness. Researchers analyse how changes in these independent factors influence the level of awareness a brand achieves among its target audience. In addition to brand awareness, researchers frequently examine brand loyalty and motivation to purchase alongside it. Based on the literature analysis, the author of the research has developed a conceptual model (see Fig. 1) to study the impact of social media activities on brand awareness. In the conceptual model, the independent variables include entertainment, interaction, trendiness, advertisement, customization, and word of mouth. These factors are analysed to determine how they influence the dependent variable, which is brand awareness.

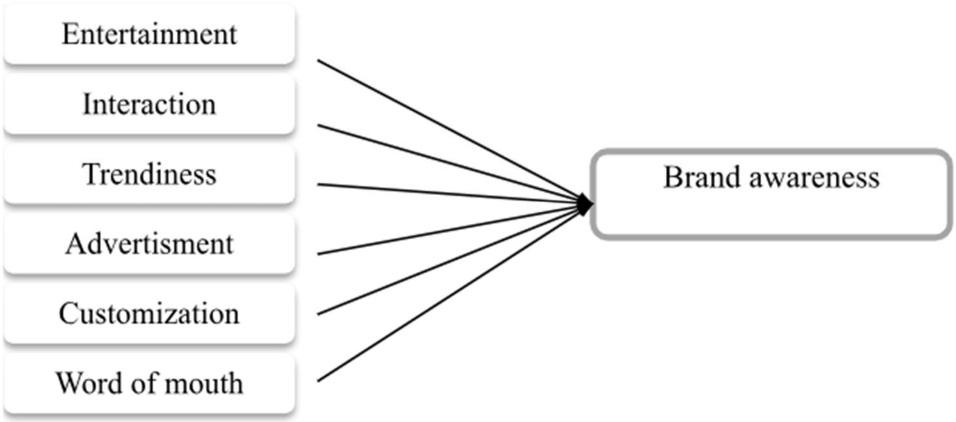

Fig. 1. Conceptual model of research (Source: author's created)

The survey consisted of two parts. The first part collected demographic data from respondents, including age, gender, type of occupation, and income level. The second part focused on evaluating various aspects of the social media factors that influence brand awareness, as well as brand awareness itself, using a Likert scale from one to five. The survey was distributed directly to customers of a specific company, where the author conducted the research. A pilot survey was initially conducted within the company, which belonged to the apparel industry, specifically MAS Holdings. Given that the aim of the research was to study the impact of social media marketing on brand awareness in the apparel industry in Sri Lanka, the author chose MAS Holdings, a well-known producer, as a suitable case for the piloting. The survey was distributed to 150 individuals who were followers of the company's Instagram page, which has a substantial following of over 16000. Out of the 150 people contacted, 68 responded, representing a relatively low response rate but still sufficient to suggest that the piloting was successful. The survey was shared in the form of a spreadsheet for respondents to complete. The data processing involved analysis using both Excel and SPSS. The author first conducted descriptive statistical analysis, followed by graphical analysis to visualize the data. Afterward, the distribution of the data was checked, and correlation analysis was performed to examine the relationships between variables.

Results

The survey results show that the majority of respondents were female (46 out of 68), with the largest age group being 26-35 years (20 females and 2 males). Male respondents totalled 22, with a higher concentration in the 46-55 age group (8 males). The distribution indicates a stronger female representation across most age categories, particularly among younger participants aged 18-35 (see Fig. 2). The data suggests that social media engagement, as reflected in this survey, is higher among younger and middle-aged females.

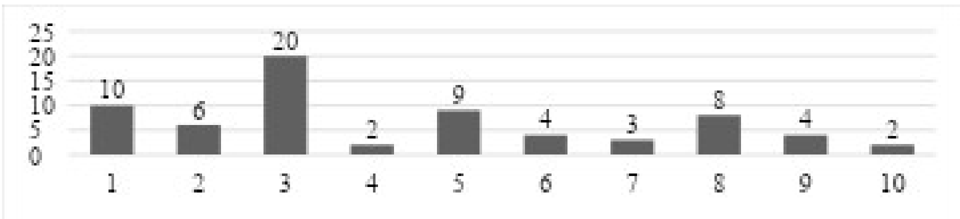

Fig. 2. Age and gender of the respondents (Source: author’s created)

The data (see Fig. 3) indicates that a significant portion of respondents have lower income levels (150-300 EUR), with many being either employed or students.

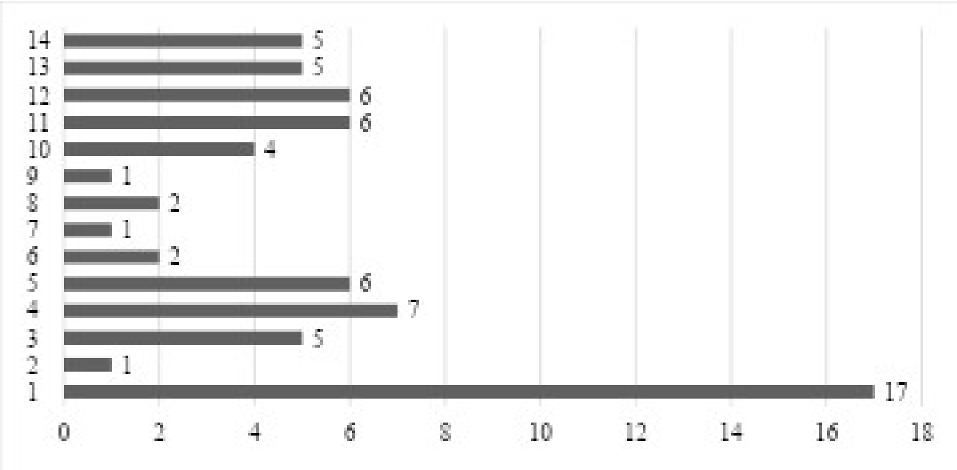

Fig. 3. Income and occupation of the respondents (Source: author’s created)

The main results (see Fig. 4) show that Interaction (3.26) received the highest average score, that indicates that respondents highly value the ability to share information, exchange opinions, and express themselves on the brand's social media page. Entertainment followed closely with a score of 3.20, suggesting that the brand's social media content is generally perceived as enjoyable and interesting. This reflects the importance of captivating content in attracting attention and maintaining user engagement, thereby enhancing the visibility of the brand. Customization, with an average score of 3.13, indicates that while providing tailored information and facilitating easy access to necessary content is helpful, it may not be as impactful as interactive or entertaining content when it comes to capturing user attention. Advertisement scored 3.11, suggesting that the brand's social media ads are found to be appealing and somewhat effective in attracting attention. However, relying on advertising alone may not significantly boost brand awareness compared to more engaging factors. Trendiness, with a score of 3.10, shows that while keeping content up-to-date helps maintain relevance, it is not perceived as a primary driver of brand awareness. The content being trendy or current needs to be complemented with other strategies to have a stronger effect. Word of mouth received the lowest score of 3.06, indicating that respondents are less inclined to share or repost the brand's content on social media.

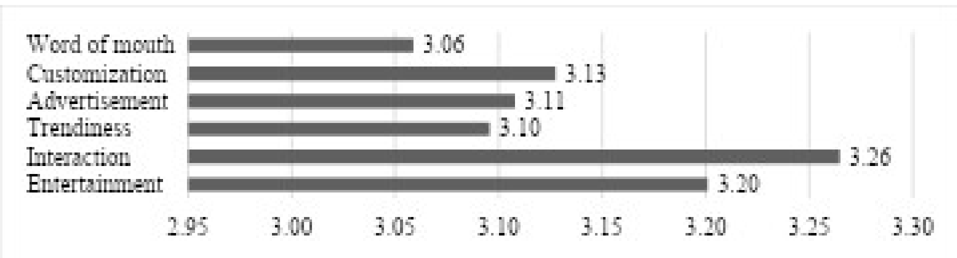

Fig. 4. Assessment of the different factors of social media marketing (Source: author’s created)

The author next examined the distribution of all the scales and tested the hypothesis of normal distribution. Since the hypothesis of normality was rejected for all variables, the author opted to use Spearman's Rho for the correlation analysis (see Table 1).

Table 1. Correlation analysis (Source: author's created)

			Brand Awareness
Spearman's rho	Entertainment	Correlation Coefficient	$.377^{**}$
		Sig. (2-tailed)	.002
		N	68
	Interaction	Correlation Coefficient	$.432^{**}$
		Sig. (2-tailed)	.000
		N	68
	Trendiness	Correlation Coefficient	$.356^{**}$
		Sig. (2-tailed)	.003
		N	68
	Advertisement	Correlation Coefficient	.139
		Sig. (2-tailed)	.260
		N	68
	Customization	Correlation Coefficient	-.072
		Sig. (2-tailed)	.558
		N	68
	Word of mouth	Correlation Coefficient	.075
		Sig. (2-tailed)	.543
		N	68

The Spearman's Rho correlation results show that interaction ($r = .432$, $p = .000$), entertainment ($r = .377$, $p = .002$), and trendiness ($r = .356$, $p = .003$) have significant positive correlations with brand awareness, indicating that these factors play a crucial role in increasing brand visibility on social media. These findings suggest that engagement, enjoyable content, and up-to-date information are the key drivers of brand awareness, while the impact of ads, tailored content, and user sharing is less important.

Conclusions

The results indicate that social media marketing factors such as interaction, entertainment, and trendiness have a significant impact on brand awareness in the Sri Lankan apparel industry. The data show that active engagement and sharing of entertaining and trendy content are essential for brand visibility. On the other hand, factors like advertisement, customization, and word of mouth appear to have a weaker influence on brand awareness. The research hypothesis stated that interaction and trendiness are the social media marketing factors that significantly impact brand awareness in the Sri Lankan apparel industry. The results support this hypothesis, as both interaction and trendiness showed significant positive correlations with brand awareness. Thus, the hypothesis is accepted. The findings of this research are applicable to companies within the Sri Lankan apparel industry that aim to enhance their social media marketing strategies to improve brand awareness. These results can guide companies in focusing their efforts on creating more interactive and up-to-date social media experience. Theoretically, this study contributes to the body of literature on social media marketing by highlighting the specific factors that influence brand awareness in Sri Lanka. Additionally, the findings can be used as a basis for further research. The author proposes to expand research area including at least three more Sri Lanka apparel producers: Brandix Apparel, Orit Apparels Lanka, Timex Garments to check the reliability of the results and using the piloted questionnaire. The analysis of the results should be also supplied with the factor. Author also considers adding the semi-structured expert interviews to gain qualitative insights. Transcription analysis should be performed on the interview data, interpreting qualitative responses to uncover themes and insights that support the quantitative findings.

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Uditha Anjana Kumara Wadumesthrige. IMPACT OF SUSTAINABLE PACKAGING ON SUPPLY CHAIN COSTS IN THE PROCESSED FOOD INDUSTRY IN SRI LANKA

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Abstract

Research relevance: The processed food industry's movement towards sustainable packaging has accelerated because environmental concerns are rising along with new regulatory demands and changing consumer demands. Sustainable packaging seeks to lower packaging materials' environmental impact but ensures product integrity and supply chain efficiency remain intact. The transition to sustainable packaging creates financial difficulties but also offers potential economic advantages for supply chain management. Understanding the financial implications of this shift is important for decision-making within Sri Lanka's processed food industry.

Research goal: To assess the impact of sustainable packaging on supply chain costs in Sri Lanka's processed food industry.

Research methods: The study used mixed methods which included surveys and questionnaires with industry stakeholders and interviews with packaging and supply chain experts along with secondary data analysis from industry reports and academic literature. The collected data were processed using Comparative Cost Analysis, Regression Analysis, Descriptive Statistics alongside Correlation Analysis and Transcription Analysis.

Main findings: The research revealed that sustainable packaging requires higher cost initially but results in major savings throughout the production stages and transport operations as well as waste disposal operations. The adoption of lightweight recyclable materials enabled companies to decrease fuel expenses and boost storage capability and reduce waste disposal expenses. Research proved that companies regained their investment expenditures in two to three years. Survey results and interview responses demonstrated that sustainable packaging improves brand image while fulfilling legal standards. However, challenges like limited local suppliers, high material costs, and technological gaps remain key obstacles to wider adoption.

Keywords: Sustainability; Processed food industry; Sustainable packaging; Supply chain cost; Sri Lanka.

Introduction

The processed food industry must choose sustainable packaging solutions because of environmental pressures along with regulatory changes and changing consumer expectations. Food preservation along with branding purposes and transportation depends on packaging yet this vital process has become a significant source of worldwide environmental destruction because of extensive single-use plastic use. Studies explain that the food industry creates substantial portions of worldwide packaging waste which demands prompt and successful solutions. Sri Lanka faces an additional pressing need regarding this issue. Daily plastic waste in the country reaches 938 metric tons while food and beverage packaging dominates the waste stream, but the recycling rate remains at less than 4% (Xinhua, 2021). Processed food sector holds economic value while depending on international markets which requires both regulatory compliance and strategic alignment with global sustainability standards (Sri Lanka Export Development Board [EDB], 2020).

The initial costs required for sustainable packaging adoption can be compensated by long-term benefits including enhanced logistical efficiency and waste management cost reduction and improved brand equity (McKinsey & Company, 2022). Research data about cost implications in Sri Lanka is scarce. This research fills the existing knowledge gap through an examination of sustainable packaging effects on supply chain expense and operational performance within Sri Lanka's processed food market. The academic findings serve industry participants and policy makers who wish to establish environmentally conscious economic solutions.

The Sri Lankan processed food industry serves as the primary research object for this study while sustainable packaging effects on supply chain costs represents the research subject. The primary goal examines how sustainable packaging delivers quantifiable operational and financial benefits to offset its first implementation expenses. The study performs multiple tasks where it examines sustainable packaging cost implications in literature and collects expert feedback and surveys alongside internal financial records to analyse investment needs and potential savings before giving strategic advice for supply chain cost reduction through optimized packaging.

The research project relies on three primary hypotheses: H1: Sustainable packaging has a positive impact on supply chain costs in the processed food industry in Sri Lanka. and H2 shows Sustainable packaging contributes to a positive impact on long term cost reductions in key supply chain areas, such as production, transportation, and waste management. and H3 verifies the adoption of sustainable packaging has a positive impact on cost savings, justifying the initial investment in eco-friendly materials and technologies. The research design combines quantitative data collected through surveys and secondary sources with qualitative information gained from expert interviews conducted with major companies. Research methods include comparative cost analysis as well as regression models and descriptive and correlation statistics together with transcription-based thematic analysis.

This research project adds new evidence about sustainable packaging economics in Sri Lanka by implementing Circular Economy and Extended Producer Responsibility (EPR) principles into operational local frameworks. The study delivers both practical insights which guide industry change and theoretical contributions although its results depend on data availability and geographic location.

Literature Review

The global processed food industry now puts sustainable packaging at the forefront because stakeholders demand solutions for environmental and economic issues. Manufacturing processes linked to packaging contribute directly to three main issues including plastic waste contamination and waste management costs along with shifting consumer demands. The Sri Lankan processed food industry generates 6% of national GDP (Ministry of Industries, 2023) thus sustainable packaging initiatives will affect supply chain costs and environmental consequences.

Single-use plastic has long remained as the principal choice for storing and distributing food products. The chosen method has produced substantial plastic waste contamination. The yearly plastic waste output from Sri Lanka reaches 249,000 tonnes according to Ministry of Environment (2021) and IGES (2020) research which shows packaging waste constitutes between 25% to 33% of this total. The environmental problems have sparked both state regulations and customer interest, which drives food producers to look for environmentally friendly packaging solutions. New sustainable packaging materials which include recycled paper and compostable films and biodegradable plastics are being used because they serve both environmental goals and operational cost reduction.

The processing stage of food depends on packaging systems to meet two essential requirements. Product quality maintenance through packaging allows safe consumption while impacting costs associated with delivery and storage as well as waste disposal requirements. Reliable packaging solutions involving lightweight materials aid both the efficient operation of warehouses and lower operational transport costs. The research conducted by Saleh et al. (2022) and the IVL Swedish Environmental Research Institute (2020) shows that sustainable packaging generates financial advantages because it decreases both fuel costs and waste disposal fees. Sustainable packaging helps companies build better brand perception while delivering what environmentally focused consumers demand (Schlegelmilch & Robertson, 2021). Introducing sustainable packaging materials demands substantial investments in materials together with equipment and operational systems which can reduce the time needed to recover initial investment if management is effective.

The evaluation analyzes research about sustainable packaging costs and performance by investigating material price disparities and supply chain operational effects against Sri Lankan market regulations. Research demonstrates sustainable package materials command higher costs than traditional plastic packaging options in the market. The production cost of biodegradable and compostable materials including polylactic acid (PLA), polyhydroxyalkanoates (PHA), and starch-based films increases by 20% to 30% for each unit (Planet Pristine, 2022). National Geographic indicates sustainable packaging materials tend to be three to four times more costly because their production scales are limited, and their manufacturing operations are complex. The Life Cycle Costing (LCC) approach serves to analyze packaging from material procurement through disposal phases although it entails initial capital costs according to multiple studies. Transportation savings together with savings from reduced landfill fees and greater recycling worth help justify the initial investment required for LCC models. Aluminum packaging represents a higher investment than tinplate, but it weighs less and offers better recycling potential which results in cost savings during shipping and end-of-life benefits (Albuquerque et al., 2019). Production scale-ups will reduce the price difference between regular packaging and environmentally friendly packaging. The Sri Lanka Institute of Nanotechnology (SLINTEC) collaborates with CBL Group and other food companies in Sri Lanka to create containers from corn husk and rice straw agricultural waste materials. The local innovations help countries decrease their reliance on imports while maintaining stable prices across global supply variations (SLINTEC, 2021). Supply chain efficiency faces direct impacts from the way packages are designed. Logistical efficiency will advance when packaging solutions are light and stackable since they increase transport density while using less fuel. Changing steel packaging to aluminium cans allows each shipment to lose more than one ton of weight which leads to substantial fuel savings. The use of modular packaging systems with reusable crates achieves time and transport efficiency which matches lean and green logistics principles (IVL, 2022). Sustainability improvements frequently involve sacrifices between different aspects. Many biodegradable materials lack the same protective capabilities as plastics which produce food spoilage through shorter product shelf life. The use of these packaging materials in food products demands quicker distribution times and sometimes requires additional refrigeration systems that escalate supply chain costs (Food Packaging Forum, 2021). Through continuous material science research scientists create new biodegradable films with oxygen barrier properties as well as edible coatings which enhance food preservation (Sorrentino et al. 2022). Heat-sealing equipment which operates effectively for PLA represents one of the numerous operational improvements that organizations typically need.

The regulatory framework of Sri Lanka plays a crucial role in determining packaging choices for companies within the country. According to CCET (2021) the National Action Plan on Plastic Waste Management (2021–2030) aims to decrease plastic packaging utilization by 30% throughout the 2030 period. The implementation of bans against PET agrochemical containers and polythene lunch sheets already forced businesses to develop alternative solutions. Major supermarket chains Keells and global manufacturer Nestlé Lanka introduced compostable bags and paper straws to their operations respectively (Nestlé Lanka, 2021).

The current policies favor sustainability yet structure-based barriers still exist. Sri Lankan companies must import PLA materials from abroad because the country does not produce these materials at scale which exposes them to currency market fluctuations. The challenge for SMEs to embrace sustainable packaging becomes especially acute because they lack both specialized expertise and financial resources. Numerous smaller companies select basic modifications over adopting completely new materials by reducing plastic thickness. Additionally, consumer behaviour remains mixed. Researchers agree that urban customers from affluent backgrounds are developing an interest in buying sustainable packaging products (Ilangasekara & Siriwardana, 2022) yet broader market acceptance remains limited through pricing concerns and inadequate customer knowledge about sustainable options. Awareness campaigns together with retailer-developed programs have started to reshape how consumers conduct their buying behavior. Over 40,000 Keells supermarket customers participate in the use of their personal containers according to data from FT (2022). Mainstream behavior accepts sustainable practices after educational programs and incentive programs support their implementation.

The processed food industry of Sri Lanka benefits economically and environmentally through sustainable packaging solutions according to literature research. The initial costs usually generate future cost reductions that stem from lower logistic costs along with waste management simplification. Market-specific solutions together with public policy direction and product knowledge initiatives will determine sustainable packaging expansion. Further research should address the cost factors along with operational barriers which affect different food processing sectors, particularly those run by small and medium-sized enterprises.

Research Methodology

The research study combined qualitative and quantitative methods to analyze sustainable packaging effects on supply chain costs in Sri Lankan processed food manufacturing. The complex nature of the topic needed quantitative analysis together with qualitative methods to achieve complete comprehension of the problem.

The quantitative research section consisted of distributing Google Forms questionnaires to supply chain experts and production managers along with procurement officers and sustainability experts from the five major processed food companies Cargills, CBL Group, Keells Food Products, Nestlé Lanka, and Prima Ceylon. The research survey consisted of 17 questions which appeared in multiple-choice format and Likert scale format as well as open-ended questions. The survey consisted of questions which examined the implemented packaging products alongside cost transformations and operational hurdles and sustainability advantages. Survey data underwent analysis using descriptive statistics, correlation analysis and regression techniques which revealed patterns and established relationships between sustainable packaging elements and supply chain cost levels.

The research augmented survey findings by conducting interviews with high-level representatives from the selected five companies. Interviews followed semi-structured methodology to uncover practical situations and obstacles and monetary effects that resulted from implementing sustainable packaging measures. The duration of each interview ranged from 30 to 45 minutes while the interview guide corresponded to the research hypotheses. The interviews underwent recording with participant authorization while transcription occurred before researchers used thematic coding to establish common themes about cost savings and implementation difficulties and long-term financial returns.

The research incorporated both primary data collection and secondary data obtained from company reports and sustainability documents together with the Ministry of Environment and Export Development Board statistics. The sources provided information about materials costs and packaging modifications together with market developments from 2018 up to 2023. A comparative analysis was used to measure traditional and sustainable packaging scheme expenditures in several supply chain areas. The research design combined survey data along with interview findings from SDLC Packaging and secondary materials which enabled a comprehensive understanding of sustainable packaging effects on financial aspects and operations. The research combines statistical data with business practice observations to verify the results. It also ensured that the findings are supported by both statistical evidence and real-world business practices.

Results

This section summarizes key findings from secondary data, survey responses, and expert interviews to evaluate how sustainable packaging affects supply chain costs in Sri Lanka's processed food industry.

Secondary Data Insights

Industry studies of sustainability reports during 2018 to 2023 demonstrated that sustainable packaging materials have higher price per unit when compared with standard plastic packaging. The price of biodegradable PLA reaches between LKR 500–600 per kilogram while petroleum-based plastic remains at LKR 300–400 per kilogram (Planet Pristine, 2023). The transition from plastic straws to paper straws at Nestlé Lanka resulted in a 33% increase in costs while CBL Group experienced identical cost escalations while switching some biscuit lines to paper wrappers.

Companies including Keells and Cargills managed to reduce their logistics costs even though they had to spend more at first. Nestlé Lanka saved 7% on fuel costs after they implemented packaging that weighed less. Cargills reduced their ice cream logistics breakages while achieving better stacking efficiency. Prima Ceylon achieved a 8-10% increase in container efficiency through their adoption of recyclable paper packaging.

Sustainable packaging solutions lowered costs from waste collection procedures. Keells decreased packaging waste by 22% using compostable bread bags and CBL transformed 250,000 wrappers into paving materials which decreased their disposal fees by 30%. Through its paper straw initiative Nestlé Lanka removed 30 metric tonnes of plastic from its operations yearly which resulted in decreased Extended Producer Responsibility obligations.

Also, businesses gained brand recognition together with regulatory benefits. Keells achieved solid customer backing while Cargills teamed up with Coca-Cola to enhance recycling transparency. The National Action Plan on Plastic Waste Management and EPR pilot schemes operated by the government provided early adopters with financial support. The EU along with other export markets now demands sustainable packaging for market access, which has become a critical requirement for companies.

Table 1. Comparative Packaging Costs (Created by the author)

Company	Sustainable Material	Cost Increase	Cost Offsets
Nestlé Lanka	Paper straws, recyclable film	~33%	Lower logistics, reduced waste fees
CBL Group	Paper wrappers	~25–30%	Bulk procurement, process efficiency
Keells	Compostable bread bags	~20%	Reduced disposal, brand value
Prima Ceylon	Paper laminate	~15%	Improved stacking and reduced damage
Cargills	Bio ice cream packs	~18%	Partnership-driven recycling cost sharing

Survey Results Overview

The processed food industry of Sri Lanka participated in 386 surveys to evaluate sustainable packaging implementation outcomes. The research questionnaire received 386 valid responses which included representatives from supply chain management, logistics management, production management, procurement management and packaging management fields. The majority of survey participants worked in the processed food industry for less than ten years which revealed that the workforce was mainly composed of new employees who brought innovative perspectives on sustainability practices.

Every participant in the survey reported their organization uses at least one sustainable packaging method. A large majority of 87.6% of participants chose recycled paper as their preferred material. The respondents found compostable materials suitable for 56.7% of their operations while biodegradable plastics accounted for 19.7%. The respondents did not utilize plant-based PLA because this material remains scarce in the market and costs more than other options. Most companies adopted readily accessible and inexpensive alternatives which included paper-based or compostable film packaging.

All participants faced financial obstacles when adopting sustainable packaging at the beginning of their implementation. The majority of 73.3% of companies succeeded in recovering their investment between two to three years while 16.1% of businesses managed to achieve returns within one to two years. The data shows sustainable packaging has gained significant viability because most companies achieved payback within a span of two to three years (73.3%) or one to two years (16.1%) or less than a year (10.6%).

Table 2. ROI Period after Sustainable Packaging Adoption (Created by the author)

ROI Period	Percentage
1–2 years	16.10%
2–3 years	73.30%
Over 3 years	10.60%

100% of survey participants reported cost savings throughout their supply chain activities as the primary benefit. The survey revealed that environmental impact reduction reached 82.1% of respondents and government regulation compliance improved to 67.1% and brand reputation strengthened to 25.1%. The main hurdles faced by businesses involved material costs and local supplier restrictions and insufficient skills for sustainable packaging technology applications.

According to survey results industry stakeholders actively support sustainable packaging, however they need better local supply systems and training with economical strategies to expand adoption beyond current levels.

Key benefits (cost savings, reducing environmental impact, conformity with regulations, and the positive image to the public) for adopting sustainable packaging include cost savings (100.0%), reducing environmental impact (82.1%), fulfilling with regulations (67.1%), and improving the brand image of the company (25.1%). There were significant constraints when it came to high initial costs (100.0%), limited supplier support (87.8%), as well as technological limitations (82.4%).

Comparative Cost Impact

Table 3 shows that sustainable packaging consistently helps companies cut costs in supply chain operations. During the survey period most companies reported decreases in their production costs. Moderate cost reductions happened in 56.5% of cases while 40.4% achieved significant savings. Manufacturers have become more productive by adopting new packaging materials. Most survey participants reported savings in transportation costs with 99.2% of them including 59.6% who saved moderately and 39.6% who achieved substantial savings. Lighter product packaging and smarter space utilization caused these decreases. Companies reported better waste management costs in their operations through 97.6% of responses. Most respondents noted their waste decreased moderately and substantially, which lowered disposal amounts and made their materials easier to recycle. The entire supply chain uses less money when companies adopt sustainable packaging.

Table 3. Comparative Cost Impacts (Created by the author)

Cost Area	Moderate Decrease	Significant Decrease	No Change
Production Costs	56.50%	40.40%	2.80%
Transportation Costs	59.60%	39.60%	0.80%
Waste Management Costs	66.30%	31.30%	2.30%

Expert Interview Highlights

Our research findings received support from five major food companies during their interviews. Cargills and Keells cut transportation costs by 12% while improving their warehouse capacity. CBL and Prima worked with their suppliers to achieve limited improvements in their production costs. Nestlé Lanka gained advantages from both its international operations and waste management systems. Most businesses have reached their investment return in a timeframe between 1.5 and 3 years. The companies gained stronger brand value plus they prepared better for regulations and increased their export market presence. The companies faced expensive initial investments along with their need to import materials and deal with price-conscious buyers.

Conclusion

This research was conducted with the intention of assessing the effect of sustainable packaging on the supply chain costs in Sri Lankan processed food industry. Through the use of synthesis of primary survey responses, expert interviews, and secondary data analysis, the study confirmed all three research hypotheses. It was initially found that sustainable packaging helps enhance supply chain cost efficiency. Over 91% of those surveyed reported cost reductions, with transportation at 99.2% and production at 96.9%, primarily because of modular packaging which improved efficiency in freight and handling. Both these findings received further validation from the other companies, Keells and Cargills.

Secondly, the results showed that sustainable packaging creates ongoing cost savings in major sections of the supply chain. The reduction of transportation costs became the main driver for accelerating ROI according to the analyses ($r = -0.299$; $\beta = -0.312$). $\beta = -0.312$), production ($r = 0.262$; $\beta = 0.200$), with waste savings offering moderate but meaningful support. Companies gained from activities like storage optimization, fuel optimization and redesigning of packaging, which enhanced the conclusions of the study.

Overall, the data justifies the opinion that sustainable packaging creates sufficient value to justify the initial cost. On average, 89.4% of companies involved in the program recovered their initial investment in three years or less with some companies doing so in 1.5 years. Expert interviews highlighted important benefits including enhanced ESG performance, enhanced brand prestige, and enhanced export appeal, making sustainable packaging essential for sustainability and profit.

However, the study is limited by the insufficient financial data from companies and the limited participation of small businesses. Future research should focus on specific business sectors, examine consumer trends, and determine ways of helping small enterprises to offset the cost of sustainable packaging from the beginning.

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Kavindi Ranasinghearachchi. CITIZENS' SATISFACTION WITH SERVICE QUALITY AND DIGITALIZATION OF THE BANKING INDUSTRY IN SRI LANKA

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Abstract

Research purpose: Customer relationship is one of the best identification and mirror images of how well a business performs in delivering the best service. The Sri Lankan Banking industry has maintained a huge history of delivering customer requirements, but with limited capacity due to a lack of technological advancements. Processes of all the business functions are based on manual work routines, which have negatively impacted the service efficiency. Therefore, business process digitalization is one of the key aspects the Sri Lankan Banking industry should focus on to know the customer well in the long run. This paper will discuss the customer satisfaction of people who experience Sri Lankan Banks through digitalized business processes.

Design / Methodology / Approach: The author collected data through primary data sources, which included a Likert scale questionnaire based on previous research published on the relationship between customer satisfaction in the banking industry under Service Quality and Digitalization.

Findings: This research investigates the Citizens' Satisfaction with Service Quality and Digitalization of the Banking Industry in Sri Lanka. The banking industry has been transformed with technological advancements, and to be a counterpart with international banking services, the Sri Lankan Banking industry needs to identify the key factors that need to be improved in order to satisfy the customers. Based on the gathered data under Service Quality, Employee Appearance, and Cleanliness have high response percentages with the satisfaction level. When it comes to digitalization, most of the customers are satisfied with Transaction Secrecy and Bill Payment Usefulness

Originality / Value / Practical implications: This research will help to identify the factors that impact customer satisfaction, especially when the services are provided through a digital environment. As a developing country, Sri Lanka needs to identify how well services are delivered to the customers and what the important areas are that need to be improved. Based on the findings, this research emphasizes the key elements and service areas that customers are strongly satisfied with yet are not important for their interaction with the banking services.

Keywords: Business Process; Digitalization; Customer Satisfaction; Listed Bank; Sri Lanka Banking Industry

Introduction

Banking services are evolving in the modern era and integrating increasingly advanced technology, which significantly enhances client convenience (Kim et al., 2024). According to the study of Hosseini et al. (2022) in terms of technology, banking systems have grown more robust and customer-focused, and they are now in competition with one another by offering services like ATMs, electronic money transfers, and online trading. The Sri Lankan banking industry has also been drastically changed with the service provided and how the banking industry adopts technology to provide developed and digitalized services. Customer satisfaction with digital banking services has also been measured in numerous prior studies, which has contributed to the development of a pool of devoted clients that are necessary to sustain regular banking operations. That being said, this implies that banks are in charge of establishing and preserving connections with clients and ensuring that they are happy with the e-banking services (Duc, 2022).

According to this study, the objective is to carry out an investigation to identify the relationship between how customers are satisfied with the service quality and the digitalization of the banking industry in Sri Lanka. In this study it will deeply investigate the service quality factors affecting customer satisfaction as well as the areas that should be digitalized, as banks provide their services to the customers. The analysis was carried out with a quantitative approach, with primary data collected through a survey questionnaire. As a first step of the analysis, the study provides the details of the respondent profile, and for further discussion, it will project the comprehensive data analysis of the customer satisfaction level of service quality and digitalization of the banking industry in Sri Lanka.

Literature Review

Digitalization

According to the research conducted by Lakchan and Samaraweera (2023) article elaborated the Digitalization of banking services as simplest terms that traditional services provided by banks are now provided digitally as a result of the banking industry becoming more digital. These services include moving money between bank accounts, monitoring and controlling bank account information, getting data about completed transactions, checking account balances, handling loans, paying payments, and more. Digitalization in the banking sector led to efficiency, customer satisfaction, timesaving, and convenience. Banks play a significant role in our daily lives. For countless people, at least a single financial transaction has been done in a single day. Digitization is not a choice for the banking industry, rather it is certain because every industry is being digitized and the banking sector is no exception. Through face the global economy, most of National Private Commercial Banks are starting to innovate to produce digital products such as E-Banking, SMS Banking, Mobile Banking as well as social media activities such as Twitter, YouTube, Instagram and Websites, to meet customer needs and provide fast service.

In the Vietnam context, Digitalization plays a huge role after the COVID-19 pandemic. Digital development has been changing economies around the globe at a rapid pace, and the COVID-19 pandemic has contributed to accelerating this process. In that strong digitization trend, developing digital banking is the inevitable path for Vietnamese banks. Because of such importance, conduct research to determine the impact of digital transformation on the business results of Vietnam Joint Stock Commercial Banks (Nguyen-Thi-Huong et al., 2023). As banks embrace digital platforms, the scope and scale of their operations have expanded exponentially, enabling them to offer a diverse range of services, from mobile banking to digital wallets and virtual advisory services (Bueno et al., 2024). In the digitalization phase electronic banking is understood as a banking model that allows customers to remotely access the bank in order to: collect information, carry out financial payment transactions based on the bank's depository accounts, and use new products and services. In that system, electronic transactions are carried out through electronic means like: Electronic Fund Transferring at Point of sale (EFTPOS), Automatic Teller Machines (ATMs), Mobile Banking, Internet Banking, and Intranet Banking (Duc, 2022). Web-based banking, is the change of customary financial administrations into advanced stages open through the web or cell phones. It permits clients to play out an assortment of banking exercises whenever, anyplace, without the requirement for actual connections with bank offices. From financial records adjusted to moving assets, computerized financial offers a helpful and productive method for overseeing monetary exchanges.

Customer Satisfaction

Customer satisfaction is considered one of the most important competitive factors and is the best indicator of a company's profitability. Increasing customer satisfaction will force a business to boost its focus on the needs of its clients and enhance its reputation and image. Customer satisfaction is critical for obtaining a competitive advantage, and online banking attributes help with this. Customers now hold a dominating position and may exert pressure on financial institutions to enhance services through competition. The empirical study of Rodrigues et al., (2023) explained that Banks may tie customers in by offering them a range of convincing and renewed services, reducing costs, and enhancing the options and experience they provide, and relying on these features to maintain their competitive advantage. They need to discover the best way to respond to the threat of digital disruption by identifying the key drivers to develop a successful team collaboration, which is indispensable to innovate and succeed. Hosseini et al (2022) conducted a study that demonstrated that banking systems have become more powerful and more customer-centric, and they are competing with each other by providing services such as online trading, electronic money transfers, and ATMs. Therefore, it is essential to serve customers at the right time when it comes to paying interest, issuing credit and debit ATM cards, and long-term deposits.

Mappanyuki et al. (2023) elaborated that it is essential for banks to be able to serve customers well so that they will be satisfied and not transfer their funds to other banks. The use of technology such as digital banking in service innovation to meet client's needs is best understood through its relationship with service users and how they perceive the service. The two main digital banking players in Indonesia, Jenius, and Digibank offer monetary advantages that traditional banks have never provided. The study explored whether or not these features are attractive enough to lure customers into using this service (Windasari et al., 2022). Customers who use e-banking can continuously analyse their account balances, transaction history, and account statements in real time so that they can make better decisions to conduct other upcoming transactions. These can enhance the value of e-banking services for the users, which can significantly influence their attitudes and behaviours toward current banks while satisfying the customer needs. Customers deliberately use e-services, the service receivers' access e-service through electronic networks and it is consumed via the Internet. As Internet banking is availed by a banking customer via the Internet, service quality in Internet Banking refers to e-service quality. E-service quality can be defined as overall customer evaluations and judgments regarding the excellence and quality of e-service delivery in the virtual marketplace (George, 2018). The digital banking offerings should be based on a solid understanding of digital consumer behavior as well as consideration of how to build and extend bank brand value for digital consumers. Fundamentally, good customer service is crucial to the value of long-term customer loyalty. The digital tipping point is a crucial opportunity and one that offers substantial benefits to those who exploit it well.

When it comes to the impact of digitalization on customer satisfaction there are several research conducted in different industries. According to the research conducted on the impact of consumers' digital purchasing intentions and physical experiences on their intention to revisit restaurants, they have distributed a survey among customers to get the end results. The questions were distributed via Instagram, the most popular and time-consuming social media platform in Türkiye. Participants were asked to respond to questions regarding whether they followed a restaurant on Instagram and if they had visited that restaurant. Furthermore, the research conducted on digital transformation is a Case Study in the Context of Insurance Companies also collected data through primary data collection. The structured and semi-structured interview types were used, since for some interviews questions were defined to which the interviewees had to answer directly, and for others, despite having been defined a priori, during the interviews, there was the opportunity to add or even eliminate some of these questions, as well as change their order according to the dialogue development.

The study of Digitalization, agility, and customer value in tourism also considers how digitalization impacts customer choices in a rapidly changing environment. Based on the study, in-depth interviews were carried out with 34 managers of tourism organizations in Cyprus. The findings highlight the role of three interrelated agility capabilities - customer, partnering, and operational - in enabling tourism organizations to leverage digital technologies to produce and/ or deliver customer value, while responding to tensions inherent within each agility dimension. Moreover, the automobile industries are also more considerable when it comes to digital transition or digital changes, as it has had a huge impact on customer satisfaction. The interplay of digital transformation, agility, environmental volatility, and innovation to spur enterprise performance: Evidence from Chinese electric vehicle firms study conduct survey to understand how digital logistics, supply chain agility, and innovation can drive sustainable performance amidst increasing environmental volatility. A survey was circulated among the managers working in the electric vehicle industry and the study received 197 responses to make the analysis on how the digital aspects impact the selected variables

The study Unveiling digital transformation: Investigating technology adoption in Vietnam's food delivery industry for enhanced customer experience, also finds different aspects of digital transformations linked with customer satisfaction. This research study aims to extend the Technology Acceptance Model by incorporating the Stimulus-Organism-Reaction theory to gain a comprehensive understanding of the factors influencing satisfaction, continued intention to use, and positive electronic word-of mouth (eWOM) in the context of Food Delivery Apps (FDAs). A quantitative approach was employed, and data were collected through a survey administered to 346 FDA users. The results reveal that both Information quality and Task-technology fit have a positive impact on satisfaction and continued intention to use.

Considering the fact, that as most of industries, banking industries are also influenced by digitalization and that affects how customers use the products and provide feedback of the services. The study of Banking Goes Digital: The Adoption of FinTech Services by German households used survey data, to analyze which FinTech services households are likely to adopt. According to the results indicate that a household's level of trust and comfort with new technologies, financial literacy, and overall transparency impact its propensity to switch to a FinTech. Data is derived from an online survey of 643 German households performed between 23 October 2017 and 11 November 2017. There was another survey conducted under Open Banking Apps (OBA) on the study of Customer perceptions on open banking apps: Insights using Structural topic modeling. This research collected 89,788 customer reviews from the Google Play store and employed Structural Topic Modeling (STM) to extract the themes of discussion around Open Banking Apps. Due to the rapidly changing environment customer satisfaction is a significant factor in helping banks to keep their competitive advantage. Based on the study conducted under Customer Satisfaction with Bank Services: The Role of Cloud Services, security, e learning, and Service Quality examined the factors influencing the satisfaction of customers with e

banking services. Data were collected through Library studies and field work to investigate the factors influencing customer satisfaction with e-banking, researcher-built questionnaires with 25 questions were utilized.

Furthermore, there is study conducted as Determinants of digital banking adoption in the Kingdom of Saudi Arabia: A technology acceptance model approach. This study aims to investigate the determinants of digital banking adoption in the Kingdom of Saudi Arabia using the Technology Acceptance Model (TAM). According to the study, the data were collected from the 2017 Global Financial Inclusion Survey, covering 1009 respondents, which provides valuable insights for financial institutions, consumers, business entities, and researchers in promoting the digital banking system in Saudi Arabia. Moreover, examining the dynamics of mobile banking apps. Adoption during the COVID-19 pandemic: A digital shift in the crisis study elaborates on the digital function of the banking industry, affecting customer preferences. This study examines the determinants with a survey that was administered to 270 respondents using convenience and snowball sampling methods. This study underscores the shifts in consumer behaviour triggered by the pandemic and highlights the ongoing potential for digital banking growth in Malaysia. According to Emotions' influence on customers' e-banking satisfaction evaluation in e-service failure and e-service recovery circumstances study conducted a survey and cross-sectional data were collected from 433 e-banking customers using a structured, respondent-administered questionnaire. Based on the research area, it contributes to efforts towards effective management of emotions related to e-service failure and evaluation of e-service recovery strategies, a study area which remains under-researched in Zimbabwe's banking sector.

Methodology

In this research, the methodology included conducting a customer survey among people who are using banking services from the Sri Lankan Banking industry. Data collected by distributing an online Google form survey and gathering responses from customers via email and social media based on the satisfaction and importance level of banking services. Analysis based on 30 questions under service quality and customer satisfaction level/importance level, as well as another 30 questions under digitalization and customer satisfaction level/importance level. The data analysis was performed applying frequency distribution, univariate analysis, (Charts), and bivariate analysis to generate the correlation coefficient of service factors and digitalization

The sample consists of 60% females (74 respondents) and 40% males (50 respondents) of the total 124 respondents.

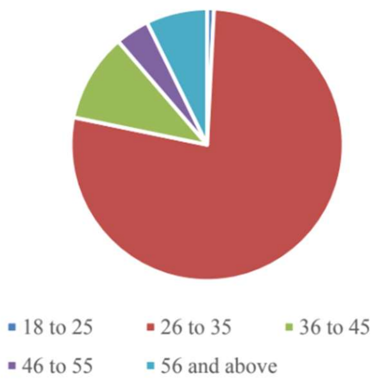

Fig. 1. Respondent age

(Source: Author developed)

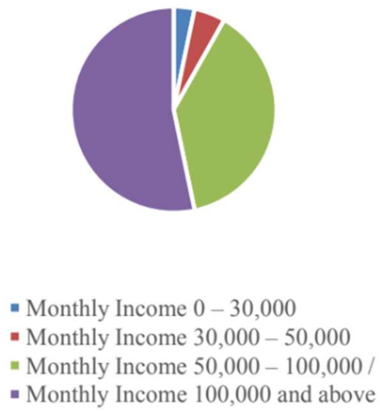

Fig.2. Respondent Monthly Income

(Source: Author developed)

According to Figure 1.1, most of the female and male respondents are based on the 26 to 35 age categories, and most of them fall under the monthly income 100,000 and above (Sri Lankan Rupees – LKR) category as mentioned in Figure 1.2

Further study identified the following data based on the respondent's education level.

Table 1. Respondent Education Level *(Source: Author's developed)*

Education Level of the respondents	Respondents (Numbers)	Respondents (Percentage)
Attended only High school - up to 10th grade	0	0%
Passed only Ordinary Level Exam	1	1%
Passed only Advanced Level Exam	5	4%
Diploma or professional Qualification	10	8%
Bachelor's Degree	32	26%
Master's Degree	69	56%
Ph.D and above	7	6%

Results

Based on the gathered data, the study identified that more than 80% of the respondents were satisfied with the following five main service qualities. With author-generated data on Table 1.2, customers are highly satisfied with employees' appearance with 85% satisfied responses.

Table 2. Service Quality Satisfaction Level Table (Source: Author's developed)

Label	Level of Satisfaction
Employee Appearance	85%
Cleanliness	84%
Reliable Services	83%
Safe Transactions	83%
Security Guard Welcome	83%

Table 3. Digitalization Satisfaction Level (Source: Author's developed)

Label	Level of Satisfaction
Transaction Secrecy	93%
Bill Payment Usefulness	90%
Feasibility Of Visa Cards	90%
Mobile Banking App Usefulness	89%
Updated Information	89%

According to Table 1.3 Digitalization Satisfaction Level, the author selected the five most highly responded Digitalized areas of Sri Lankan Banks, and "transaction secrecy" counted 93% out of 30 questions.

Based on the results generated, the correlation coefficient emphasizes the strong relationship between different service quality and digitalization variables. According to the analysed data, Transparent Communication and Maintaining Commitments are highest as the positive correlation of 0.870 (when one variable increases other variable increases) based on service quality and customer satisfaction. The second and third highest correlations were generated in the relationship between Well-designed Counter and Proper Display Boards (Correlation Coefficient 0.819), Cleanliness and Proper

Display Boards (Correlation Coefficient 0.806). With related to analysing the relationship between service quality elements and customer satisfaction, the study identified that overall general satisfaction and prompt service provided by the banks have a negative correlation with the fair deposit variable, as -0.0196 and -0.115 respectively.

Considering the relationship between digitalization and customer satisfaction, the highest correlation coefficient of 0.896 was reported with Mobile Banking App Usefulness and Updated Information of under the digital services provided by the bank. The second and third highest correlations were generated in the relationship between Unique Attention and Individual Requirements (Correlation Coefficient 0.830), Time-saving System and Mobile Banking App Usefulness (Correlation Coefficient 0.821). When identifying the positive correlation, there is also a negative correlation of the variables of ATM Length of Time and ATM Cash Withdrawal Limit with the ATM Language variable -0.119 and -0.118 respectively.

Conclusion

This study main purpose is to investigate citizens' satisfaction with service quality and digitalization of the banking industry in Sri Lanka. As the elements of this study, the customer satisfaction changes with the service quality and digitalization in the banking services provided by the banks. Based on the analysed data, the study revealed that the relationship between customer satisfaction with service quality and digitalization plays an important part in the Banking Industry. Based on the outcome of this study, there are key areas which has been identified as the relationship between Customer Satisfaction and Service Quality. As customers are more satisfied with Employee Appearance, Cleanliness, Reliable Services, Safe Transactions, and Security Guard Welcome. The negative aspect of the study shows that more of the core service qualities have been neglected by the banks, as Alternative/practical solutions, Personal interest, promised deadlines, operating hours, and contact with my bank have the lowest customer satisfaction ratings.

Moreover, the study analysed the relationship between Bank Services Digitalization and customer satisfaction to identify the elements that have a high impact on customers' preferences. Consistent with research outcomes, Transaction Secrecy, Bill Payment Usefulness, Feasibility of Visa Cards, Mobile Banking App Usefulness, and Updated Information are highly satisfied by the customers of using Sri Lankan Banking services. However, there are some aspects like Individual Requirements, Unique Attention, ATM length of time, Cardless aspect, and ATM cash withdrawal limit, which Sri Lankan banks need to improve as service providers.

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Shirinkhon Obidova. THE IMPACT OF ARTIFICIAL INTELLIGENCE ON BUSINESS DECISION-MAKING AMONG UZBEK COMPANIES

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Abstract

Research relevance: Artificial Intelligence (AI) is increasingly shaping business decision-making processes by offering data-driven insights, improving operational efficiency, and reducing human biases. AI adoption enables businesses to enhance strategic planning, optimize resource allocation, and drive innovation. However, challenges such as high implementation costs, ethical concerns, and the risk of over-reliance on AI raise critical questions about its sustainable integration into business operations.

Research goal: This study examines the role of AI in business decision-making, assessing its benefits and challenges. By analysing both theoretical frameworks and empirical data, the research identifies AI's impact on decision efficiency, predictive accuracy, and overall business performance. The objective is to provide insights that facilitate AI adoption while addressing potential risks and limitations.

Research methods: A mixed-methods approach was employed, integrating qualitative and quantitative analyses. The qualitative component involved an extensive review of peer-reviewed literature and industry reports. The quantitative analysis was based on survey data from five Uzbek companies—Akfa Group, Craffers, Murad Buildings, Uzum, and Yandex Uzbekistan—comprising 40 business professionals. A structured questionnaire with Likert-scale and open-ended questions assessed perceptions of AI's role in decision-making, its benefits, and associated challenges. Descriptive statistics and correlation analyses were used to interpret the data.

Main findings: Survey results highlight AI's significant impact on business decision-making: (1) 80% of respondents reported AI-driven reductions in human error; (2) 85% observed improved forecasting accuracy in market trends and consumer behaviour; (3) 75% noted enhanced customer engagement through AI-powered personalization; (4) 65% confirmed a positive return on investment (ROI) from AI applications. Despite these benefits, challenges persist: 60% of participants cited high implementation costs, 50% expressed concerns over over-reliance on AI at the expense of human judgment, and 55% raised ethical and data privacy concerns.

Keywords: Artificial Intelligence; Business Decision-Making; Data-Driven Decisions; Machine Learning; Ethical Concerns.

Introduction

In today's fast-paced and data-driven business environment, decision-making plays a critical role in an organization's success. The ability to make informed decisions quickly and accurately is more important than ever before. Traditional decision-making methods often involve intuition, experience, and historical data, but they can be inefficient, time-consuming, and prone to biases (Brynjolfsson & McAfee, 2017). With the increasing volume of data available to businesses, it has become increasingly difficult to process and analyze this information manually.

Artificial Intelligence (AI) has emerged as a game-changing tool that enables businesses to leverage advanced algorithms, machine learning models, and big data analytics to make faster and more accurate decisions. AI technologies, including natural language processing (NLP), predictive analytics, and machine learning, provide businesses with the tools to analyze large datasets, identify trends, and make data-driven decisions that were previously unimaginable (Davenport & Ronanki, 2018; Agrawal, Gans, & Goldfarb, 2018).

One of the key advantages of AI-driven decision-making is its ability to process and analyze vast amounts of structured and unstructured data in real-time. Businesses today generate massive volumes of data from various sources, including customer interactions, market trends, and internal operations. AI-powered systems can sift through this data, extract meaningful insights, and provide recommendations that facilitate more precise decision-making (Russell & Norvig, 2016; McKinsey & Company, 2020).

Moreover, AI enhances decision-making by reducing human errors and biases. Traditional decision-making often involves cognitive biases, emotions, and subjective judgments that may not always align with optimal outcomes (Binns, 2018). AI, on the other hand, relies on data-driven analysis, ensuring that decisions are based on factual information rather than personal opinions. However, ethical concerns regarding AI decision-making persist, including algorithmic bias, fairness, and data privacy (Susskind, 2020).

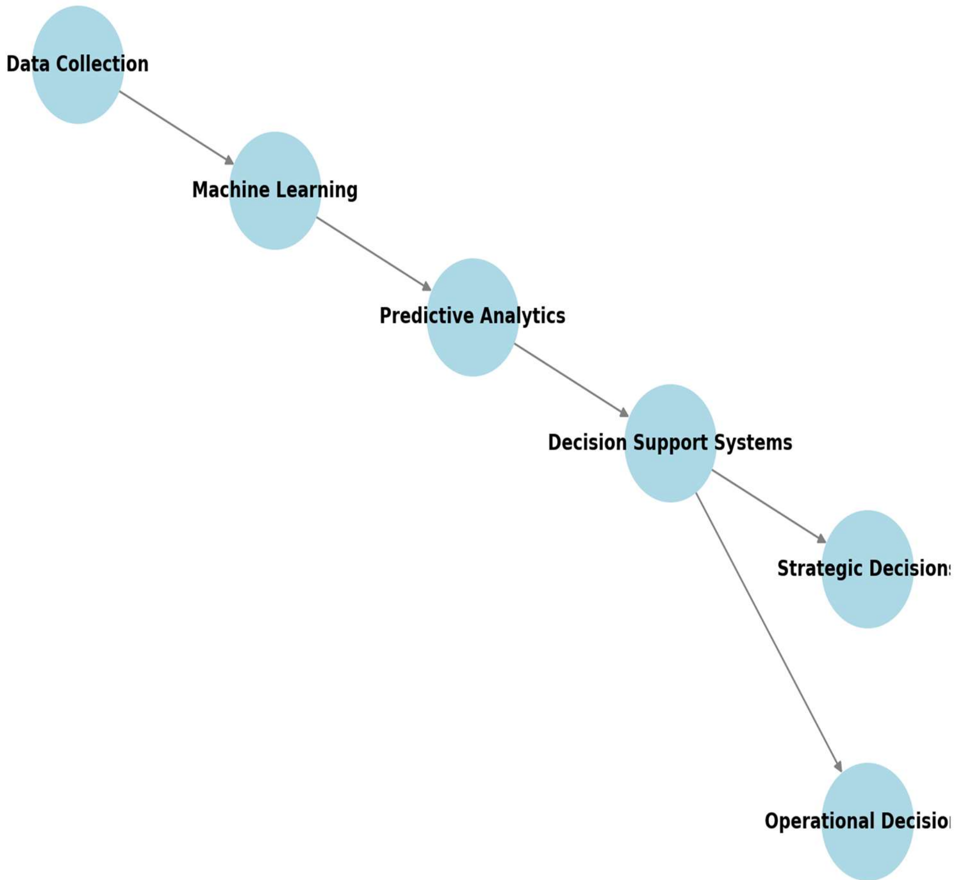

Fig. 1. Conceptual Framework of AI's Role in Business Decision-Making

Literature Review

AI's Evolution and Role in Business Decision-Making

Artificial Intelligence has grown beyond its initial conception as a tool for automating simple tasks into a powerful asset for business decision-making. Researchers have highlighted that AI's ability to analyze large, complex datasets at high speed is unmatched by traditional data processing methods (Kaplan & Haenlein, 2019). AI applications in business include automating decision-making in customer segmentation, fraud detection, demand forecasting, supply chain optimization, and personalized marketing (Davenport & Ronanki, 2018; Cummings, 2017).

Machine Learning and Data-Driven Insights

Machine learning, a core subset of AI, enables systems to improve automatically through experience, thereby enhancing the quality of business decisions. For instance, predictive analytics powered by machine learning models can forecast consumer behavior, demand patterns, and even stock market trends with remarkable accuracy (West, 2018). AI's role extends to strategic decision-making, where executives can leverage AI tools to simulate scenarios, assess risks, and make informed choices that shape the direction of their businesses (Haenlein & Kaplan, 2020).

Despite its advantages, AI adoption in business decision-making presents several challenges. One significant barrier is the complexity of integrating AI technologies into existing organizational frameworks. According to Kaplan and Haenlein (2019), AI integration often requires substantial upfront investments in infrastructure, skilled personnel, and training. For small and medium-sized enterprises (SMEs), these costs may outweigh the perceived benefits, preventing them from adopting AI-driven solutions.

Ethical and Legal Challenges in AI Adoption

Ethical issues related to AI are another prominent concern in the literature. One of the major risks associated with AI in decision-making is algorithmic bias, where machine learning models produce skewed results due to biased training data (Binns, 2018). This issue has raised calls for greater transparency and fairness in AI algorithms, along with the need for regulations that ensure AI technologies are used responsibly (Smith, 2018).

Over-Reliance on AI vs. Human Judgment

Furthermore, the growing dependence on AI systems has sparked debates about the diminishing role of human judgment in decision-making. While AI tools offer enhanced efficiency and objectivity, they also raise concerns about the erosion of human intuition and creativity in complex decision-making processes. Some scholars argue that a balance should be struck between AI's predictive capabilities and human oversight to prevent over-reliance on machine-driven outcomes.

Methodology

Research Design: Qualitative and Quantitative Approaches:

This study employed a mixed-methods approach, integrating both qualitative and quantitative methodologies to investigate the impact of Artificial Intelligence (AI) on business decision-making. The qualitative component involved a review of peer-reviewed literature and industry reports to establish a theoretical foundation (George, Haas, & Pentland, 2014). The quantitative component comprised a survey administered to five companies in Uzbekistan that had either implemented or expressed a clear interest in adopting AI tools.

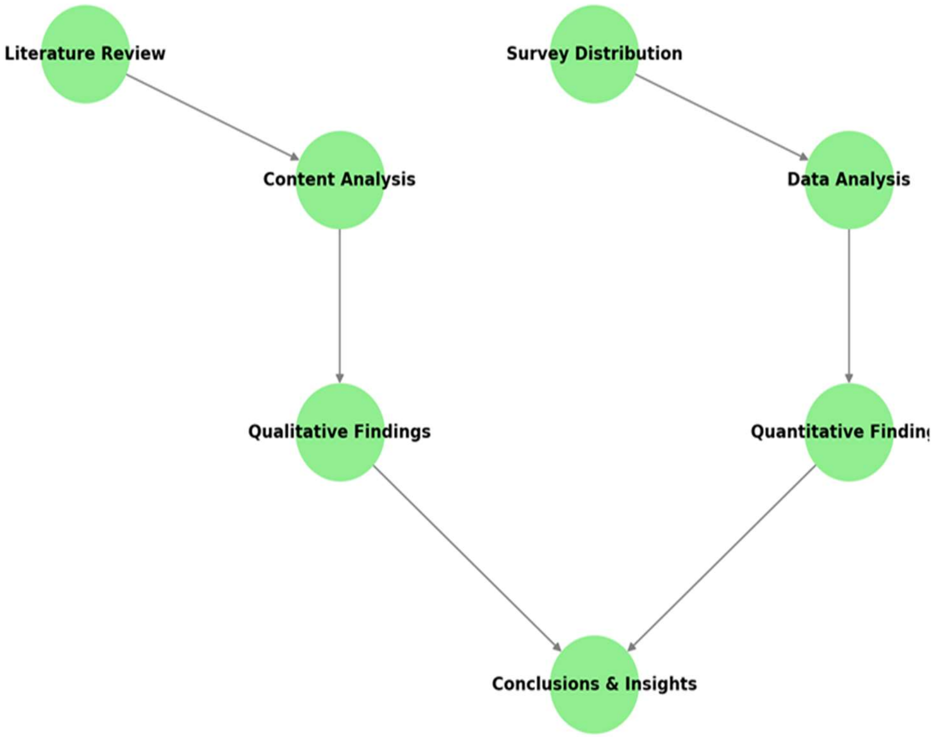

Fig. 2. Flowchart of the Mixed-Method Research Process

Sampling and Participants

A purposeful sampling strategy was used to identify organizations with existing or emerging AI practices. Five Uzbek companies—Akfa Group, Craffers, Murad Buildings, Uzum, and Yandex Uzbekistan—were selected, yielding a total of 40 participants. Each company contributed approximately eight respondents, consisting primarily of mid-level managers, data analysts, and team leaders who regularly engage in decision-making processes. These individuals possess direct knowledge of AI-related projects within their respective organizations, ensuring relevant insights for the study.

Data Collection Instruments

A structured questionnaire was developed, composed of closed-ended and open-ended items. Closed-ended items utilized a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) to measure perceptions of AI's impact on decision-making efficiency, predictive accuracy, return on investment (ROI), and potential ethical concerns. Open-ended items solicited further elaboration on perceived benefits and challenges of AI adoption.

Data Analysis

Descriptive Statistics: Mean scores, standard deviations, and frequency distributions were calculated for each Likert-scale item to assess overall trends.

Correlation Analysis: Pearson correlations were employed to explore relationships between perceived AI benefits (e.g., efficiency, ROI) and reported organizational challenges (e.g., cost barriers, ethical concerns). This approach follows established standards in organizational research (Holmström & Roberts, 1998).

Results

The quantitative survey findings indicate that participants perceive notable benefits from AI tools—such as reduced human error, improved forecasting accuracy, and enhanced customer satisfaction—while also facing common challenges (e.g., cost barriers, ethical concerns). These results partially align with larger-scale studies (Davenport & Ronanki, 2018; Kaplan & Haenlein, 2019) but offer a localized perspective within Uzbekistan.

Table 1 below summarizes the key survey questions and aggregated responses. For each statement, the table shows the mean score, as well as the percentage of participants who agreed/strongly agreed (4 or 5), were neutral (3), or disagreed/strongly disagreed (1 or 2).

Table 1. Survey Responses on AI Impact and Challenges

Survey Statement	Mean	% Agree (4 or 5)	% Neutral (3)	% Disagree (1 or 2)
1. "AI tools significantly reduce human errors in decision-making."	4.20	80%	10%	10%
2. "AI-driven data analysis increases accuracy in forecasting market trends."	4.35	85%	5%	10%
3. "Our organization has experienced a positive return on investment (ROI) from AI solutions."	3.90	65%	20%	15%
4. "AI-driven personalization has improved our customer satisfaction and engagement."	4.25	75%	15%	10%
5. "High implementation costs hinder our ability to scale AI solutions."	3.80	60%	25%	15%
6. "We are concerned about over-reliance on AI, potentially reducing human judgment in critical decision-making."	3.60	50%	30%	20%
7. "Data privacy and ethical implications of AI remain a major concern for our organization."	3.70	55%	30%	15%

As seen in Table 1, the highest mean scores are associated with reducing human errors (4.20) and increasing forecasting accuracy (4.35). The lowest (though still moderate) mean scores are linked to over-reliance on AI (3.60) and ethical/ privacy concerns (3.70). These findings underscore a strong overall endorsement of AI's benefits alongside lingering reservations about costs and risks.

Table 2. Percentage of respondents agreed on each statement

AI-Related Statement	% Agree
AI reduces human errors	80%
AI increases forecasting accuracy	85%
Positive ROI from AI	65%
Improved customer satisfaction	75%
High implementation costs as a barrier	60%
Over-reliance on AI	50%
Ethical concerns about AI	55%

As can be seen from Figure 2, 80% of respondents agreed that AI tools significantly reduce human errors. This dovetails with prior research suggesting data-driven AI models can mitigate biases and oversights (Kaplan & Haenlein, 2019). Moreover, 85% noted improvements in forecasting market trends, and 65% reported seeing a positive ROI. Qualitative comments pointed to better inventory management at Akfa Group and more effective product launch timing at Craffers. When it comes to customer satisfaction, 75% of participants reported that personalized recommendations or automated support systems had boosted engagement and satisfaction—consistent with studies on AI-driven personalization (Davenport & Ronanki, 2018).

However, according to Figure 2 the study also revealed several challenges associated with AI adoption:

- Cost Barriers: 60% cited high implementation costs as inhibiting further AI integration, especially for smaller departments within Murad Buildings and Uzum
- Human Oversight: Half (50%) expressed worry about over-reliance on AI—fearing the loss of human insight in critical decisions
- Ethical & Privacy Issues: 55% remain cautious about data privacy, underscoring the need for clearer regulatory frameworks and transparency (Binns, 2018).

Overall, these results indicate that, in the context of five Uzbekistan-based companies, AI tools are valued for enhancing decision-making efficiency and predictive accuracy, yet financial constraints, ethical considerations, and the role of human judgment remain key challenges. Future research may examine larger samples across diverse sectors and explore longitudinal impacts of AI adoption on corporate strategy and culture.

Conclusions

This study investigated the impact of Artificial Intelligence (AI) on business decision-making through a mixed methods design that included a focused literature review and a survey of 40 participants from five Uzbek companies. The findings underscore several advantages of AI-driven processes—such as improved forecasting accuracy, reduced human errors, and enhanced customer engagement—consistent with prior research (Davenport & Ronanki, 2018; Kaplan & Haenlein, 2019). However, high implementation costs, ethical concerns, and the potential for over-reliance on AI persist, mirroring broader debates on responsible AI governance and the importance of human oversight (Binns, 2018; Smith, 2018).

Despite the modest sample size and regional focus, the integration of quantitative results with qualitative insights provides a clearer perspective on how AI can bolster organizational performance while introducing new risks. For effective AI adoption, this study highlights the need for robust technical infrastructures, budgetary planning, and ethical frameworks that balance automated analytics with human judgment. Such an approach can optimize AI's benefits without undermining critical strategic or ethical dimensions, offering a pathway for businesses—particularly in emerging markets—to navigate AI's transformative potential responsibly.

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