

A Study on Computerization and Innovation in Jewellery Retail Sector with Reference to Kerala

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Abstract-This study examines the implementation and contentment rates of several technologies in the retail jewellery sector in important districts of Kerala, India. The present study investigates the use of various technologies, including online transactions, billing software, CCTV, online delivery applications, scanning systems, and theft control systems, in 50–60 jewellery retail outlets across Thrissur, Ernakulam, Kozhikode, and Kottayam using a quantitative analysis. Data is collected from primary and secondary sources and explained with the help of tables, pie charts, and charts. The aim of the study is to learn about various technologies implementing computerization in the jewellery retail sector, to measure the level of customer satisfaction, and to measure the level of employee satisfaction. The study reveals that online transactions, billing software, and CCTV are extensively used, indicating a significant desire from retailers for improved digital capabilities, speed, and security. Customer satisfaction with these advances is very high, highlighting their good perceived impact. Furthermore, employees show great satisfaction with computerization, mainly because it reduces their responsibilities. The report contends that effective computerization and innovation, despite the initial expenses, improve efficiency, information accessibility, organizational structure, security, customer experience, and the overall performance of jewellers. It asserts that although there is some opposition, the market increasingly anticipates technological adoption and finds it advantageous overall. It recommends government backing through training initiatives and financial rewards for future integration.

Keywords: Jewellery retail sector, Computerization, Innovation, Technologies, Satisfaction.

INTRODUCTION

The jewellery business functions in a highly competitive and ever-changing retail setting. Jewellery merchants are under increasing pressure to use innovation to improve efficiency, attract modern

consumers, and ultimately boost sales and profitability. The "Computerization of Jewellery Retail Shop Management System" attempts to streamline operations and reduce the clerical workload in labor-intensive jewellery businesses. Jewellery shops may automate inventory monitoring, accounting procedures, customer relationship management, security standards, and more by using cost-effective retail software and modern technology.¹ Computerization improves the supervision and management of all retail operations by minimizing human mistakes and paperwork. The software facilitates the creation of sales reports, inventory analytics, client purchase history, and other essential data to support management decision-making based on facts rather than intuition. Computerization enhances productivity and enables the creation of unique omnichannel retail experiences that seamlessly combine physical and online shopping for a personalized jewellery browsing and purchasing adventure. Innovation involves consistently improving product variety, shop designs, and services to enhance perceived value in a growingly competitive retail jewellery sector.

Possible aspects of innovation in jewellery retail encompass customization, new products, digital integration, shop designs, customer service, social responsibility, and more.⁶ Jewellery retailers can gain a competitive edge in the innovation-driven retail sector by combining computing capabilities with creativity to make data-driven strategic decisions, enhance shopping experiences for consumers, and improve business performance.³ Implementing computerized management systems is essential for success in the future when businesses operate across several channels.⁷

STATEMENT OF PROBLEM

Computerizing jewellery retail stores may be costly to set up and sustain. Moreover, inadequate system security may lead to data loss or security breaches. Moreover, the system may need thorough training for personnel to utilize it efficiently, incurring significant costs and time investment. Customer discontent may occur if the system is not user-friendly or fails to provide the expected quality of service.

SCOPE OF STUDY

This study paper intends to explore the technologies used for computerization in the jewellery retail industry and assess the satisfaction levels of consumers and workers. The study will only take place in four specific districts of Kerala: Thrissur, Ernakulam, Kozhikode, and Kottayam. The study will investigate several technological advancements used in jewellery retail stores, such as online transactions, billing software, CCTV surveillance systems, online delivery apps, scanning systems, and theft control techniques.⁶ Data will be gathered from 50-60 jewellery retail stores in certain areas using a quantitative survey approach to study the adoption rates and usefulness of these technologies. The research will evaluate consumer satisfaction levels with the deployed improvements and measure their perceived influence on the shop experience. The study will assess employee satisfaction with computerization, specifically examining factors like workload reduction and perceived advantages. The study is limited to the defined geographical area and specifically examines the jewellery retail sector in Kerala to analyze the technology environment and satisfaction dynamics within this industrial niche.

OBJECTIVE

- To know about various technologies implementing computerization in the jewellery retail sector.
- To measure the level of customer satisfaction.
- To measure the level of employee satisfaction.

RESEARCH METHODOLOGY

This research employs both primary and secondary data. Primary data is acquired through surveys and

interviews with jewellery retail shop owners, workers, and consumers in Kerala who have experience with and skill with the introduced computerized technology. Secondary data is gathered from sources such as books and journals to offer a thorough and dependable comprehension of the issue, aiding the investigation. Convenience sampling is utilized for gathering primary data. Data is gathered from many districts in Kerala, including Thrissur, Ernakulam, Kozhikode, and Kottayam. Each site featured around 50 to 60 jewelry retail businesses. Most of these jewellery retail establishments are automated. The percentage analysis tool is utilized for examining the gathered information.

LIMITATIONS

- Some retail shops may decline to disclose information regarding their computerized systems due to concerns over potential data leakage, which could restrict the comprehensiveness of the data gathered.
- Data collected from secondary sources may be outdated, potentially limiting the accuracy and relevance of certain aspects of the study's findings.

REVIEW OF LITERATURE

Rohit Tekriwal's study in 2022, "How Technology is Reshaping the Retail Industry," reveals that advanced technologies are revolutionizing retail enterprises by improving productivity and boosting customer experiences. The retail industry serves a significant number of people every day, making it essential to adopt and effectively utilize cutting-edge technology to fulfill customer demands and enhance corporate opportunities. In recent years, the retail industry has witnessed technological advancements and may anticipate the introduction of additional innovative technologies in the future.¹⁰

Yi Song (2019) discovered that smart jewelry, which incorporates technology into wearable items, attracts technology enthusiasts due to its interactive features and practicality. This has led to a significant sales increase for smart wristwear, rings, and pendants. Seamless integration of technology and cooperation between technology and jewelry are crucial as

industrial advancements increasingly blend with traditional jewelry.¹²

Hugo Tiago Rocha et al. (2018) conducted a study on the analysis and enhancement of processes in the jewelry industry. The research enhanced management procedures and production control in a jewelry firm by utilizing lean thinking tools and MES software. Novel solutions reduced waste and guaranteed ongoing enhancement, leading to higher customer satisfaction. The primary results indicate significant enhancements in processes resulting from the use of techniques rooted in lean philosophy and MES software. The approach included using lean thinking and a MES system to minimize inefficiencies in the manufacturing process.⁴

Kiran Babu Raj and colleagues (2018) conducted a study on survival and growth strategies for retail gold jewelry MSMEs in Kerala. This study effectively examines the correlation between strategy and performance in enterprises located in Kerala. A framework is suggested to examine the primary strategic aspects that impact a company's performance. The results indicate that strategy components are significantly positively correlated with performance.⁵

Aditi Khandelwal's study in 2016 discovered that retailers serve as the last connection in the distribution chain and have direct interaction with customers. India's retail sector is predominantly unorganized, with 90% of businesses operating in this manner. However, the industry is undergoing significant transformation due to the emergence of foreign chains that are establishing formalized operations. This tries to emphasize the prospects for increased efficiency in retail operations as technology advances.¹

THEORETICAL FRAMEWORK

Computerization in retail establishments involves utilizing computers and other devices to handle and store client information. This involves monitoring client movements in the store, documenting customer transactions, and managing consumer preferences. Computerization has transformed the shopping experience. It has facilitated our ability to locate desired things and make purchases efficiently. Computerization offers several benefits to economies and has various effects on society.⁵

Computerization is a component of innovation occurring in the retail industry. The utilization of billing software significantly accelerated customer transactions. Consequently, enormous queues for billing were eradicated, and other technical breakthroughs have also occurred in the retail industry.¹ Every progress will be thoroughly examined. Computerization can result in heightened automation and less human labour. This may result in higher levels of unemployment and lower pay. Computerization can result in heightened consumption and diminished societal cohesion. It can also result in heightened environmental contamination. Computerization has greatly benefited the retail business, making it more convenient for consumers to buy the products they desire.

STAGES OF COMPUTERIZATION IN RETAIL SHOPS

Retail shops undergo a significant computerization process. Multiple qualities and elements must be considered while adopting a computerized system or other innovative technology in a retail establishment.⁵ A shop owner will go through three steps before implementing a computerized system in their business. Each level has advantages and disadvantages that need to be addressed. The business owner will make a decision based on these valuations. Computerization may significantly influence a shop's future; thus, decisions should be based on extensive study.

- **Beginning Phase:** Computerized technology may be utilized for stock and inventory management. Computerized systems can monitor stock levels of various things in the shop and notify personnel when stock is low or new items are introduced. This can help maintain optimal stock levels and prevent goods from lingering on shelves for extended periods. The owner will assess if it is appropriate to introduce a computerized system and other advances in the shop at this point.
- **Implementation Stage:** Another phase where computerized technology may be integrated into retail stores is through the utilization of point-of-sale (POS) systems. These systems enable employees to receive customer orders and subsequently handle the payments for those transactions. They may monitor the inventory levels of various things in the store and notify

personnel when stock is low or new items are added. This can help maintain optimal stock levels and prevent products from remaining on shelves for extended periods of time. At this point, the owner would face a greater expense compared to previous phases, referred to as the implementation cost. It includes all expenses associated with implementing the computerized system in retail stores, such as installation, equipment, software, and operational costs.

- **Implementation Stage:** At this point, the computerized technology is utilized to improve performance results. Computerized technologies can handle the customer database. This involves maintaining the customer's purchasing history and offering them customized promotions and deals based on their previous purchases. This can help guarantee a great consumer experience in the business and assure their satisfaction with the purchased products. Computerization may transform retail establishments, resulting in improved organization, efficiency, security, precise inventory management, and more marketing opportunities.⁷ The financial investment needed is significant and includes expenses for new gear, software licensing, personnel training, customization services, and IT infrastructure changes. Ongoing risks like hacking, viruses, data breaches, and system failures need to be managed to prevent disruptions in corporate operations. When contemplating computerization, retail establishments must carefully evaluate if the anticipated advantages will justify the substantial expenses and potential hazards. Establishing practical budgets and deadlines for implementation is crucial, along with creating continuity strategies to address IT outages. Thorough testing of new systems should be carried out prior to their complete implementation.

Retail computerization seems to be an unavoidable transition as customers and the industry want real-time, multichannel purchasing experiences.⁶ Retailers who carefully and patiently incorporate new technologies strategically can achieve significant operational enhancements and competitive edges.⁴ Rushing to computerize without enough precautions can lead to project failure, data loss, and substantial financial setbacks. Retailers may effectively shift to

automated and digital operations by adopting a balanced strategy, thereby steering clear of significant challenges.

DATA ANALYSIS

Table-1 Types of Computerized Innovations Implemented

COMMONLY USED COMPUTERISED TECHNOLOGIES	NUMBER OF STORES USING THESE TECHNOLOGIES
Billing	36
Online transaction	45
Online delivery app	24
CCTV	28
Scanning system	19
Theft control	13

Source: Primary data.

Interpretation

The study's data analysis shown in Table 1 revealed the uncovered significant findings on the implementation of several technological advancements in the jewellery retail industry in certain districts of Kerala. Online transactions were the most widespread and desired innovation among the technologies examined, being present in 45 of the assessed stores. This shows a significant tendency to use digital platforms to make transactions more efficient and convenient. The extensive use of online transaction systems highlights the industry's acknowledgment of the necessity to include technical improvements to cater to changing customer tastes and market requirements. New billing software quickly gained popularity after online purchases, with around 36 stores implementing this technology. Retailers are strategically using new billing technologies to optimize transaction processes, increase speed, and enhance operational effectiveness. Retailers want to enhance transactional operations, reduce mistakes, and provide consumers with a smooth and efficient checkout process by using sophisticated billing software.³

The installation of closed-circuit television (CCTV) systems at 28 stores highlights the industry's dedication to improving security measures in retail establishments. CCTV equipment is a crucial tool for preventing theft, monitoring business activity, and ensuring the safety of products and consumers. Retailers' use of CCTV systems demonstrates their proactive stance in protecting assets and ensuring a

safe shopping environment. Moreover, the incorporation of online delivery services at around 24 stores demonstrates a heightened focus on meeting the rising need for convenience and accessibility among customers. Retailers are using online delivery alternatives to broaden their client base, adapt to evolving consumer habits, and offer more convenience to shoppers looking for easy shopping experiences.³ Implementing scanning technologies in approximately 19 stores and theft control measures in 13 stores demonstrates merchants' focused initiative to improve operational efficiency and reduce risks related to inventory management and security breaches. Scanning technologies help with precise inventory tracking and management, while theft control methods work to reduce losses and safeguard precious items from unlawful access or theft. The findings highlight the jewellery retail sector's proactive use of technology to generate innovation, boost operational efficiency, and improve consumer experiences. Retailers in Kerala's jewellery business are enhancing their development and competitiveness in the digital marketplace by investing in a variety of technology solutions.

Table -2-Customers Satisfaction level

LEVELS OF SATISFACTION OF CUSTOMERS	REACTION CALCULATION
GOOD REACTION	25
ABOVE AVERAGE REACTION	7
AVERAGE REACTION	11
BELOW AVERAGE	7
NOT SO GOOD REACTION	0

Source: Primary Data

Interpretation

The Table 2, in the present paper shows customer satisfaction levels with developments in the jewellery retail industry. The findings provide a detailed view, illuminating the varied reactions and feelings expressed by clients towards the new technologies. Half of the clients expressed high levels of enjoyment and satisfaction with the advances. This shows a favorable response to the technical improvements and upgrades implemented by jewellery stores.² The high satisfaction rating in this area highlights the success of the innovations in satisfying customer expectations and improving their shopping experience.¹

Additionally, 14% of consumers reported feeling pleased or satisfied with the services they received, suggesting a modest degree of satisfaction. Although not as enthusiastic as the extremely happy group, these customers see the improvements positively and find them adequate in addressing their requirements and preferences to some degree. 22% of customers had a neutral or average sentiment towards the innovations introduced in the jewellery retail industry.⁴ This category comprises people who are neutral about the introduced technological developments. The comments indicate a level of uncertainty or lack of interest in the advances, presenting a chance for merchants to better involve and inform customers about the advantages and value of the technology being used.

Additionally, 14% of consumers expressed disinterest or apathy towards the new developments. The lack of negative feedback or discontent indicates a neutral position rather than a clear rejection or disapproval of the new innovations in this area. Not all customers may completely adopt or prioritize the introduced technology, but they do not see it adversely or as a hindrance to their entire shopping experience. The lack of negative feedback from clients is a positive indicator for the jewellery retail industry.² The adopted improvements have not generated considerable unhappiness or criticism from customers, regardless of their various levels of excitement or participation. Retailers must consistently monitor customer feedback, fix any problems or gaps in satisfaction, and enhance their technology tactics to maintain great experiences and client loyalty.⁹

Table- 3-Reaction of Employees towards Computerization

WERE THEY SATISFIED	NO. OF STORES WHOSE EMPLOYEES WERE SATISFIED
Yes	43
no	7

Source: Primary data.

Employee Satisfactory Level Interpretation

Above data (Table 3) clearly states that around 86% of respondent employees are happy with their implementation of computerized system in the jewellery retail shops. This shows that the implementation of computerized system has helped them to boost their sales. This data indicates that the

implementation of computerization was the right decision to do. Employees' workloads were minimized. Process of billings became easy.

RESULTS

Analyzed questionnaire responses provide important insights into how new technologies are being adopted and used in jewellery retail outlets. Online transaction capabilities were the most often used new technology among the enterprises surveyed, being present in 45 locations. This highlights the industry's acknowledgment of the significance of digital transactional capabilities in enabling speedy and smooth customer interactions.

- New billing software became popular after online purchases, and it was used in 36 establishments. Retailers are using this strategy to simplify the checkout process, increase transaction speed, and enhance operational efficiency.
- Additionally, CCTV surveillance systems were discovered to be in use at 28 shops, indicating a strong focus on improving security measures in retail establishments. Retailers are taking a proactive approach to protect assets and ensure a secure shopping environment for consumers and products.
- Limited adoption was seen for technology including online delivery, scanning systems, and theft control measures. There may be a lack of attention to specific elements of digital retail interface, speed, and security in the jewellery retail industry. The findings emphasize the necessity for more investigation and execution of strategies to improve these areas in order to align with changing customer expectations and market requirements.

The findings show that clients are generally pleased and satisfied with the computerization and technical improvements in jewellery retail stores. Employees were pleased with the implementation of computerization, seeing a reduction in their workload as a major advantage. The results emphasize the advantages of incorporating technology to enhance operational efficiency and staff happiness in the jewellery retail industry.

SUGGESTIONS

- In order to foster widespread adoption of computerized technologies within the retail sector, it is imperative for governmental bodies to provide both legal and financial support to retail owners. This support could take the form of subsidies or grants aimed at offsetting the initial costs associated with implementing computerized systems. By alleviating the financial burden on retail owners, such initiatives would incentivize greater uptake of technological innovations across the industry.
- Moreover, investing in comprehensive training programs for employees is essential to ensure that they can effectively utilize these computerized systems to their full potential. By equipping employees with the necessary skills and knowledge, organizations can maximize the benefits derived from technology adoption, such as increased efficiency and productivity.
- Additionally, governmental agencies should develop schemes and incentives to encourage new retailers to opt for computerization of their stores from the outset. This could include providing tax incentives or preferential treatment for businesses that embrace technological advancements early on. By promoting a culture of innovation and modernization within the retail sector, these schemes would help to future-proof businesses and enhance their competitiveness in an increasingly digital marketplace.
- Overall, these recommendations underscore the importance of proactive government intervention in driving technology adoption within the retail sector. By providing support, training, and incentives, policymakers can facilitate the transition towards a more technologically advanced and efficient retail landscape, benefiting both businesses and consumers alike.

CONCLUSIONS

Extensive research on computerization in the jewellery retail industry has highlighted the essential need for technology integration in this field. Introducing computers into jewellery retail operations is expected to greatly improve overall performance and operational efficiency.² Many data and study

results highlight the possibility of enhancing information accessibility, organizational structure, and operational efficiency through computerization.

Furthermore, there is convincing data indicating that computerization has a favourable effect on consumer satisfaction levels. Computerization improves consumer happiness by facilitating faster transactions, increasing security in buying operations, and optimizing operational procedures. The progress is in line with changing consumer expectations and tastes, enhancing the retail experience as a whole.

Although there are large initial expenses and worker concerns about job displacement, the advantages of computerization surpass these obstacles. Retail business owners that are well-trained may utilize computerization to take advantage of its many benefits. Retailers may maximize the benefits of computerized technology by receiving proper training and assistance, leading to increased operational efficiency, enhanced consumer experiences, and improved corporate success.

The research findings strongly support the implementation of computerization in the jewellery retail industry.⁴ The research highlights the transformative potential of computerization in driving operational gains and boosting customer satisfaction levels, despite early expenses and possible worries among workers. It is essential to use technology developments in the jewellery retail sector for future success and sustainability.

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