

RURAL VS URBAN RETAIL: A COMPARATIVE STUDY ON CUSTOMER SERVICE AUTOMATION IN THE RETAIL INDUSTRY

Amar Pashupatimath & Annapurna Kunnur***

DOI: <https://doi.org/10.5281/zenodo.19477390>

ABSTRACT

The retail sector is experiencing rapid transformation due to advancements in automation technologies such as automated billing systems, digital payment platforms, artificial intelligence-based customer support, and smart inventory management. While urban retail stores have increasingly adopted these technologies, rural retail markets are gradually adapting to automation with varying levels of success. This study aims to compare rural and urban retail stores in terms of adoption, effectiveness, and challenges associated with customer service automation. The research adopts a quantitative approach using a structured questionnaire distributed among retail store owners and managers. The findings are expected to reveal differences in technological adoption, customer acceptance, and operational efficiency between rural and urban retail environments. The study also highlights key barriers to automation implementation and provides insights for improving customer service automation in the retail industry.

KEYWORDS: *AI, AI Tools, Digitalization, Teaching Learning Process, Service Experience, Higher Education.*

* **Dr. Amar Pashupatimath**, Coordinator, KLE's BK BBA & BCA Management College, Chikodi.

** **Annapurna Kunnur**, Assistant Professor, Department of BBA, KLE's BK BBA & BCA Management College, Chikodi.

Introduction:

The retail industry plays a crucial role in economic development and consumer satisfaction. In recent years, technological advancements have significantly influenced retail operations and customer service practices. Automation technologies such as point-of-sale systems, self-checkout machines, artificial intelligence-based chatbots, and digital payment systems are increasingly being integrated into retail businesses to improve efficiency and service quality. Urban retail markets have been at the forefront of adopting such technologies due to better infrastructure, greater technological awareness, and higher customer expectations. On the other hand, rural retail markets are still in the early stages of adopting automation, often facing challenges such as limited internet connectivity, lower digital literacy, and financial constraints. Customer service automation helps retailers streamline operations, reduce waiting time, improve billing accuracy, and enhance overall customer satisfaction. However, the level of acceptance and effectiveness of these technologies may differ between rural and urban retail environments. Therefore, understanding these differences is important for retailers aiming to improve service delivery and competitiveness. This study focuses on comparing rural and urban retail stores in terms of the adoption and impact of customer service automation from the perspective of retail store owners and managers.

Literature Review:

Automation in retail: An executive overview for getting ready. by Steven Begley, Bryan Hancock, Tom Kilroy, and Sajal Kohli Automation has become an essential part of modern retail management. Studies indicate that retail automation improves operational efficiency and reduces manual errors. Technologies such as automated billing systems and inventory management tools help retailers manage large volumes of transactions effectively.

Impact of Technology on Customer Service. by Amid Khatibi Bardsiri - Islamic Azad University, Tehran The Impact of Information Technology on Service Quality, Satisfaction, and Customer Relationship Management (Case Study: IT Organization Individuals) Research suggests that automation enhances customer

service by reducing waiting time and improving service quality. Automated checkout systems and digital payment options provide convenience to customers and contribute to better shopping experiences.

Rural and Urban Retail Differences - Retail Marketing for Rural and Urban Regions: A Comparative Study

by 1. Ashish Pandey, 2. Dr. Avjeet Kaur 1Project Consultant, National Institute of Educational Planning and Administration, New Delhi, Research Scholar, K.R. Mangalam University, Sohna Road, Gurgaon, Haryana, India. 2Professor, Business Marketing, K.R. Mangalam University, Sohna Road, Gurgaon, Haryana, India. Previous research highlights significant differences between rural and urban markets in terms of infrastructure, consumer, and technology adoption. Urban markets tend to adopt advanced technologies more quickly, while rural markets may face limitations related to resources and awareness.

Challenges in Retail Automation Despite the advantages of automation, retailers often encounter challenges such as high implementation costs, lack of technical expertise, and resistance from customers or employees. These challenges are more prominent in smaller retail stores and rural markets.

Research Gap: Although several studies have examined digital transformation in retail, limited research has focused on comparing customer service automation between rural and urban retail stores from the retailer's perspective. This study attempts to fill this gap by analyzing adoption levels, benefits, and challenges in different retail environments.

Objectives of Study:

- To compare the adoption of customer service automation technologies in rural and urban retail stores.
- To identify the types of automation tools used in retail stores.
- To examine the impact of automation on service efficiency and operational performance.
- To analyze customer acceptance of automated services from the retailer's perspective.
- To identify challenges faced by retail stores in implementing

automation.

- To evaluate future plans for automation adoption in retail stores.

Hypothesis:

- H₀₁: There is no significant difference between rural and urban retail stores in the adoption of customer service automation.
- H₁₁: There is a significant difference between rural and urban retail stores in the adoption of customer service automation.
- H₀₂: Customer service automation does not significantly improve service efficiency in retail stores.
- H₁₂: Customer service automation significantly improves service efficiency in retail stores.
- H₀₃: There is no significant difference in customer acceptance of automation between rural and urban retail markets.
- H₁₃: There is a significant difference in customer acceptance of automation between rural and urban retail markets.

Research Methodology:

- **Research Design:** The study uses a descriptive and comparative research design.
- **Research Approach:** A quantitative approach is used to analyze the data collected through questionnaires.
- **Population:** Retail store owners and managers operating in rural and urban areas.
- **Sample Size:** Approximately 100 respondents from retail stores.
- **Sampling Technique:** Convenience sampling method.

Data Collection:

- **Primary data:** Structured questionnaire
- **Secondary data:** Journals, books, and online sources.

Findings:

- Equal number of retail Stores were considered for the research in terms of location of rural and urban, it was found that Apparel/Fashion and Groceries/Supermarket were highest number of stores which were studied during the research.
- Most of these Retail stores, were into operations from last 6 to 10 years in business and had on an average 50 walk-ins and

customers per day.

- More than 82% of these stores are providing automated customer service technology, these automations are used mainly in Billing / POS (Point of sale) and customer feedback collection.
- Around 50% of these stores have adopted automation tools from last three years.
- The main reason for this adoption of automation is to improve customer service, reduce waiting time and to improve accuracy in running their businesses.
- More than 90% of the Stores agree that automation adoption has improved their service efficiency.
- More than 80% of the Stores have found that automation has also reduced billing error and about 70% of Stores believe that automated retail stores are more convenient for their customers.
- 80% of the Store believe that automation helps in faster checkouts and saves time, 90% of the Stores feel that automation implementation in their business has improved overall customer satisfaction.
- Around 80% of Stores feel that use of automation in their business has helped them to manage their customer data efficiently.
- More than 90% of the Stores, conclude that customers in their area or location are comfortable in using automated system.
- It was observed that only 45% of the stores are satisfied with infrastructure support (internet, electricity, digital payment) for automation.
- More than half of the Stores, agree that rural and urban customers have different expectations regarding automation.
- 64% of the Stores feel that customers are not aware about automation in rural areas and most of the stores face technical issues, customer resistance, lack of staff, maintenance cost, and high cost of technology when it comes to challenges faced while implementing automation in retail.
- More than 60% of this stores believe that use of automation will reduce need for staff.
- More than 64% of stores are interested in increase of automation

level in future for their Stores.

- Stores will be investing in automation in future in the areas of 1. Self-check out system 2. Smart inventory system 3. Mobile app based shopping 4. AI customer support 5. Loyalty programmes.
- Close to 91% of the stores feel that Automation will improve their overall retail business performance.

Conclusion:

This study examined the adoption and impact of automated customer service technologies in rural and urban retail stores. An equal number of stores from both locations were considered to ensure a balanced comparison. The results indicate that apparel/fashion and grocery or supermarket stores formed the major segment of the sample. Most of these retail stores have been operating for the past six to ten years and receive an average of around fifty customers per day, showing that the study focused on actively functioning retail businesses. The findings reveal that a large majority of the stores have adopted automated customer service technologies, particularly in billing or POS systems and customer feedback collection. A significant number of these stores have implemented such technologies within the last three years, reflecting the recent growth of automation in the retail sector. The primary reasons for adopting automation include improving customer service, reducing waiting time, and enhancing accuracy in retail operations.

The study further shows that automation has had a positive impact on retail performance. Most store owners agreed that automation improved service efficiency, reduced billing errors, enabled faster checkout processes, and increased overall customer satisfaction. Additionally, automation has helped retailers manage customer data more effectively and provide a more convenient shopping experience. The majority of retailers also observed that customers are comfortable using automated systems, which indicates a gradual acceptance of technology in retail environments.

However, the research also identified certain challenges associated with automation adoption. Infrastructure limitations such as internet connectivity, electricity supply, and digital payment facilities remain concerns, particularly in some areas. Retailers also highlighted differences in expectations between rural and

urban customers, with lower awareness of automation among rural consumers. Technical issues, customer resistance, lack of trained staff, maintenance costs, and the high cost of technology were reported as major barriers to implementation. Despite these challenges, the outlook for automation in retail remains positive. Many stores expressed interest in increasing the level of automation in the future. Retailers believe that automation will continue to enhance business performance and improve customer service in the long term. Overall, the study concludes that automation is becoming an essential element of retail management and has significant potential to transform both rural and urban retail sectors.

Suggestions:

- **Strengthening Infrastructure:** Improvement in internet connectivity, electricity supply, and digital payment infrastructure is necessary to support the smooth functioning of automation systems in retail stores, particularly in rural areas.
- **Customer Awareness Programs:** Retailers and local authorities should conduct awareness campaigns and demonstrations to educate customers about automated retail systems, especially in rural markets where awareness is relatively lower.
- **Training and Skill Development for Staff:** Retail store employees should be provided with proper training to operate automated systems efficiently and handle technical issues. This will improve the effectiveness of automation implementation.
- **Adoption of Affordable Technology:** Technology providers and policymakers should encourage the development and availability of cost-effective automation solutions suitable for small and medium retail businesses.
- **Phased Implementation of Automation:** Retailers should adopt automation gradually, starting with essential systems such as billing and POS, and later expanding to advanced technologies like AI-based customer support and smart inventory systems.
- **Customer-Friendly System Design:** Automation tools should be simple, user-friendly, and adaptable to the needs of both rural and urban customers to increase acceptance and usage.
- **Policy Support and Incentives:** Government initiatives,

subsidies, or financial support programs can motivate retail businesses to adopt digital technologies and automation.

- Scope for Future Research: Future studies can include a larger sample size, more diverse retail sectors, and customer perspectives to gain a deeper understanding of the impact of automation on retail performance and customer satisfaction.

References:

1. Begley, S., Hancock, B., Kilroy, T., & Kohli, S. (2019). Automation in retail: An executive overview for getting ready. McKinsey & Company. <https://www.mckinsey.com/~media/McKinsey/Industries/Retail/Our%20Insights/Automation%20in%20retail%20An%20executive%20overview%20for%20getting%20ready/Automation-in-retail-An-executive-overview-for-getting-ready-FINAL.pdf>
2. Pandey, A., & Kaur, A. (2018). Retail marketing for rural and urban regions: A comparative study. International Journal of Applied Engineering Research, 13(23), 16612-16617. https://www.ripublication.com/ijaer18/ijaerv13n23_60.pdf
3. Talebi, H. (2023). The impact of information technology on service quality, satisfaction, and customer relationship management (Case study: IT organization individuals). Journal of Management Science & Engineering Research, 6(2). https://www.researchgate.net/publication/372822768_The_Impact_of_Information_Technology_on_Service_Quality_Satisfaction_and_Customer_Relationship_Management_Case_Study_IT_Organization_Individuals