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**AI FOR FOOTWEAR RETAILERS: UNLOCKING OPPORTUNITIES WHILE NAVIGATING CHALLENGES**

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*With the advancement of technology, artificial intelligence (AI) has been increasingly adopted across various industries, including retail. This research paper focused on the footwear industry, with particular emphasis on the integration of AI in the retail footwear sector. The footwear market was observed to be in a developmental phase driven by AI adoption, which contributed to improved sales performance, efficient inventory management, and enhanced customer satisfaction.*

*The study collected both primary and secondary data. Primary data were collected from footwear retailers using a structured questionnaire. In addition, selected case examples of companies such as Jio Mart and Flipkart, which actively use AI in their retail operations, were examined to gain deeper insights into the research topic. Jio Mart adopted an omnichannel retailing approach, while Flipkart utilised AI-driven algorithms to analyse consumer preferences and personalise offerings.*

*The primary objectives of the study were to understand the role of AI in enhancing business efficiency and customer satisfaction in the retail footwear industry and to examine the opportunities and limitations associated with AI adoption. While AI presented significant opportunities for improving business operations and decision-making, it also posed certain limitations that could hinder growth. Overall, the study provided a comprehensive understanding of the opportunities and challenges of AI implementation in the retail footwear industry.*

**Keywords:** AI, Footwear retail, Opportunities and Challenges.

**1. INTRODUCTION**

The Indian footwear market is in the growing phase. Footwear is seen as a fashion statement. Consumers' requirements for footwear have changed in response to fashion trends, seasons, and occasions. Footwear can be purchased from physical stores, digital platforms and omnichannel (physical stores + digital platform). Omnichannel has gained importance due to the rise in technology. The growth of technology, along with AI, has provided opportunities for expansion in sales, inventory management, and consumer satisfaction. An AI algorithm has been a boon as it helps in providing consumers' browsing history, preferences, and purchase history. With access to AI, retailers can improve inventory management, personalised marketing techniques, attract customers, and enhance efficiency. AI has helped to cover the wider market and improve the overall sales. Retailers have started implementing AI in their business to improve accountability, better sales records, and refine inventory management. Digital records have simplified the process of inventory management. Retailers are concerned about the data theft that may affect their business decisions. Some retailers are still lacking in adapting technology because of a lack of knowledge and many other reasons. So, this research aims to study the opportunities and challenges in adopting AI in the retail footwear industry.

**2. REVIEW OF LITERATURE**

Gaikwad (2025) examined the digital transformation of small retailers in India, focusing on the opportunities and challenges associated with adopting digital technologies. The study found that digitalisation enabled retailers to access previously untapped markets, resulting in improved sales and enhanced operational efficiency. Concurrently, small retailers confronted several barriers to digital adoption, notably financial constraints, cybersecurity risks, and deficiencies in requisite skills. To deepen contextual understanding, the researcher conducted two case studies: one involving a small retailer in Kolkata and another examining digitalisation impacts in a rural locality. Researcher concluded that digitalisation is critical for understanding consumer needs, enhancing sales and operational efficiency, and maintaining long-term competitiveness.

Ther (2025) investigated the impact of the Digital India initiative on e-commerce growth in India. The study identified several positive outcomes associated with the initiative, including increased online customer engagement, rising e-commerce sales, simplified regulatory frameworks, and streamlined GST procedures. The researcher further observed that Digital India has altered consumer purchasing behaviour by encouraging the adoption of new technologies and prompting consumers to consult online information prior to purchase. Although digitalisation has extended into rural markets, significant challenges persist—most notably inadequate

infrastructure, limited digital skills, and concerns regarding data security. The study also notes governmental efforts to promote digital literacy among small retailers to enhance their competitiveness.

Bhoite (2025) examined the opportunities and challenges confronted by informal businesses in the Mumbai region resulting from the introduction of artificial intelligence (AI) technologies. Positioning Mumbai as India's financial capital, the study investigated small retailers' perceptions and experiences with AI tools in their business operations. Findings indicate that many retailers perceive digital marketing as a means to expand their customer base, while reporting that consumer engagement remains stronger in offline settings and that interpersonal skills continue to play a key role in attracting customers. The study also found that a substantial proportion of retailers face difficulty in understanding the functionality and applications of various AI tools. Additionally, researcher observed widespread adoption of digital payment methods among the retailers surveyed.

Cui and Bulis (2025) investigated the drivers and barriers to artificial intelligence (AI) adoption within retail enterprises through a comprehensive ten-year literature review. The review indicates that AI applications can enable retailers to reduce costs, improve inventory management, and apply algorithmic approaches to product marketing. However, the authors also identify significant impediments to adoption, including limited knowledge, trust deficits, and perceptions of high implementation costs linked to the need to adapt existing organisational practices. Researchers conclude that AI adoption would be advantageous when supported by appropriate technology-related policies.

Arora (2024) examined the role of artificial intelligence (AI) in converging online and offline retail channels. The study suggests that, although integration of digital and physical channels presents substantive challenges, it is essential for accurately understanding consumer needs and enhancing customer satisfaction. Researcher reports that AI contributes to trend analysis and inventory management, enables personalised recommendations, and improves the overall shopping experience. The study further assesses voice-based interfaces and AI-driven customer-service solutions as mechanisms that facilitate problem resolution and act as bridges between online and offline sales channels. Drawing on case studies from multiple sectors that have integrated omnichannel experiences, the researcher concludes that addressing integration challenges is imperative for retailers seeking long-term competitiveness.

### **3. RESEARCH GAP**

Following a comprehensive literature review and data collection, it is evident that advancements in artificial intelligence (AI) have enhanced business efficiency across industries. However, there is a lack of empirical research addressing the footwear retail sector. Existing studies are predominantly literature reviews and lack empirical grounding in researchers' experiences. To address this gap, the present study investigates the impact of AI on footwear retail by collecting primary data from retailers via a structured questionnaire to capture their day-to-day experiences with AI deployment.

### **4. OBJECTIVES OF THE STUDY**

1. To analyse the role of AI in enhancing efficiency and customer experience in footwear retailing in the UMC region.
2. To identify AI-driven opportunities for footwear retailers operating in the UMC region.
3. To examine region-specific challenges and constraints in adopting AI in the UMC footwear retail sector.

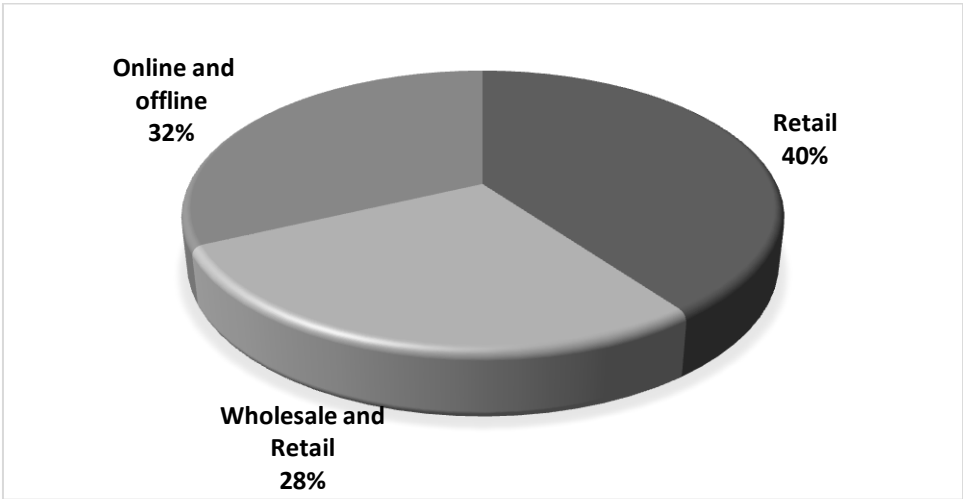
### **5. RESEARCH METHODOLOGY**

This study investigates the opportunities and challenges associated with the adoption and deployment of artificial intelligence (AI) by footwear retailers in the UMC region. Primary data were obtained via a structured questionnaire administered to footwear retailers in the UMC region. To contextualise and enrich the primary findings, relevant secondary literature on AI applications in the retail sector was reviewed. Additionally, two case studies on Jio Mart and Flipkart were undertaken to illuminate practical AI implementations. The Jio Mart case examines a retailer operating through both physical outlets and a digital platform, while the Flipkart case analyses the platform's use of purchase and search histories, recommendation algorithms, and customer-satisfaction metrics.

### **6. DISCUSSIONS AND RESULTS**

The study employed both primary and secondary data. Primary data were collected from footwear vendors in the UMC region using a structured questionnaire specifically designed to address the study objectives. The sample composition is illustrated in Figure 1.

Figure 1: Responders of the study

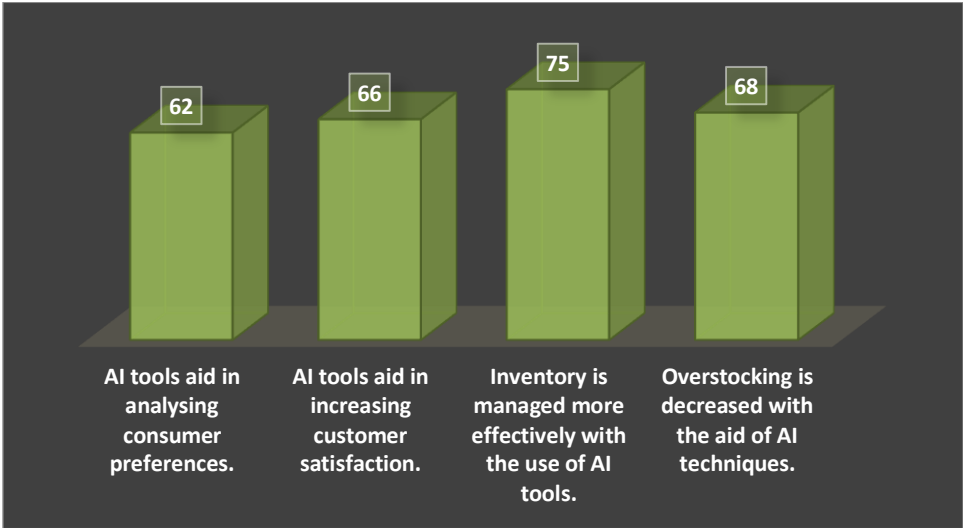


Source: Assembled by Researcher

As shown in the figure, the sample comprises wholesalers and retailers: 28% of respondents identified as wholesalers and retailers, while retailers constituted the largest group at 40%. Additionally, 32% of respondents reported using omnichannel retailing that integrates online and offline channels. This indicates that retailers are adapting to modern ways of retailing along with traditional ways. The findings indicate that a substantial proportion of footwear retailers in the UMC region are leveraging AI technologies and distributing products via online channels. AI tools can help broaden the market reach by targeting a larger number of customers. Retailers are actively adopting technological advancements to maintain competitiveness; such adoption is likely to enhance customer attraction and contribute to long-term business viability.

To summarise retailers’ perceptions of AI’s contributions to inventory management and consumer satisfaction, respondents were surveyed on AI’s role in understanding consumer preferences, enhancing consumer satisfaction, and improving inventory management and stocking practices, as shown in Figure 2.

Figure 2: Role of AI in enhancing efficiency and customer experience



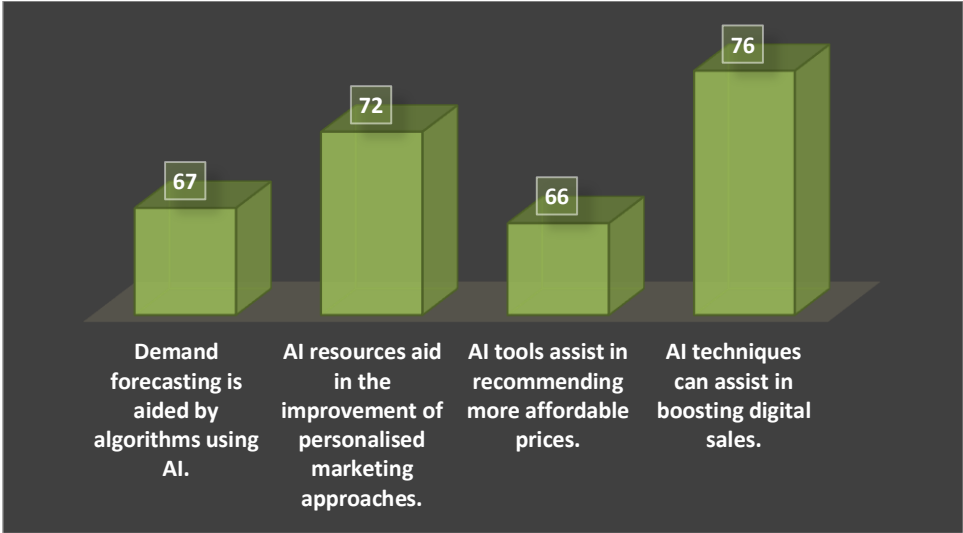
Source: Assembled by Researcher

The data indicate that retailers principally perceive AI as an operational optimiser, with a pronounced impact on inventory control and overall efficiency. Specifically, 68% of respondents reported that AI reduces overstocking, and 75% ranked AI as most beneficial for enhancing operational efficiency. Moreover, 62% indicated that AI aids in analysing consumer preferences, while 66% associated AI with improved consumer satisfaction. These findings suggest that retailers view AI as facilitating personalisation, trend detection, and more accurate assortment decisions that better align inventory with buyer preferences. The consistently high responses (all above 60%) imply that AI is perceived to support activities across the retail value chain, including demand forecasting, avoidance of deadstock, improved fulfilment timing, and enhanced post-purchase

experiences, thereby contributing to customer retention and improved cash flow. In summary, footwear retailers in the UMC region view AI as a key enabler of inventory efficiency and consumer alignment, with potential to yield operational savings and higher customer satisfaction.

The study further examined perceived opportunities afforded by AI adoption among footwear retailers, focusing on demand forecasting, personalised marketing, pricing optimisation, and sales growth as shown in Figure 3.

Figure 3: AI-driven opportunities for footwear retailers

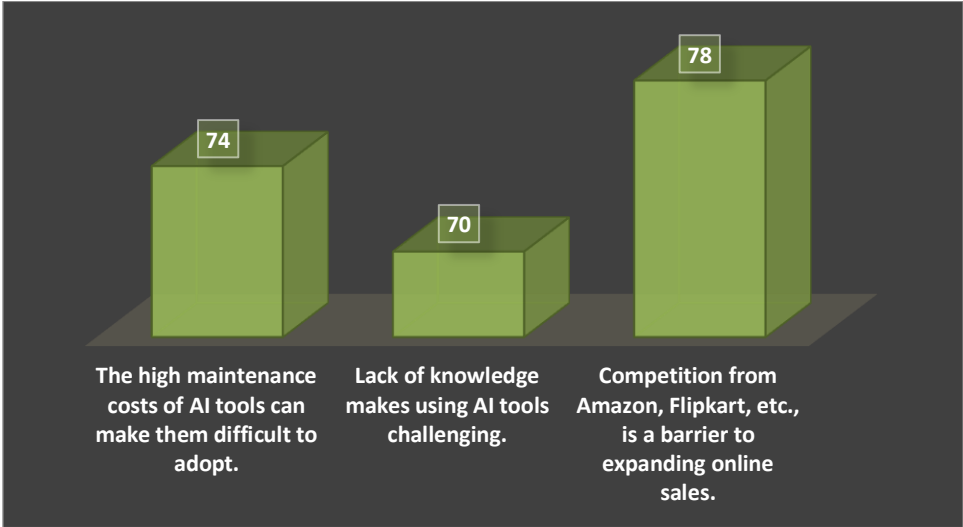


Source: Assembled by Researcher

A substantial majority of respondents reported favourable outcomes associated with these AI capabilities: 76% indicated that AI contributes to boosting sales, 72% affirmed its utility in designing personalised marketing strategies to attract and retain consumers, 67% cited AI’s usefulness for demand forecasting, and 66% reported that AI supports price recommendation and optimisation. Given that all reported measures exceed 65%, the findings suggest that retailers in the UMC region are deriving measurable benefits from AI implementation. Collectively, these results indicate that AI technologies not only enhance operational decision-making through improved forecast accuracy and dynamic pricing but also strengthen customer engagement via targeted promotions, thereby creating conditions conducive to business expansion.

Even though respondents acknowledged the benefits of AI, several significant barriers were reported. The study also explored constraints impeding retailers’ adoption of AI, as illustrated in Figure 4.

Figure 4: Challenges and constraints in adopting AI



Source: Assembled by Researcher

The predominant concern cited was competition from large online marketplaces (e.g., Amazon, Flipkart), reported by 78% of respondents. Retailers view these platforms as a primary threat to sales and market share. A

substantial proportion (74%) indicated that the financial burden of acquiring, integrating, and maintaining AI systems poses a major obstacle, undermining cost-efficiency, particularly for smaller operators seeking omnichannel expansion. Approximately 70% of retailers reported insufficient technical expertise as a barrier to effectively utilising AI tools, constraining their ability to realise potential benefits.

Collectively, these findings highlight that, despite positive perceptions of AI's operational and commercial advantages, structural and resource constraints, competitive dynamics, cost barriers, and capacity deficits significantly limit widespread adoption among footwear retailers in the UMC region. Addressing these challenges through targeted interventions (e.g., subsidised technology access, training programs, and scalable AI solutions) may be critical to translating AI opportunities into broader sectoral gains.

Two illustrative case studies of major e-commerce firms - Jio Mart and Flipkart were conducted to contextualise the role of digital and AI-enabled retailing practices.

- Jio Mart: The case study revealed that Jio Mart employs an omnichannel retailing strategy anchored by a mobile application. The platform offers multiple payment modalities, including online payments and cash-on-delivery, which have contributed to sales growth. Implementation of omnichannel processes was associated with improvements in consumer experience and inventory management, resulting in enhanced operational efficiency.
- Flipkart: The Flipkart case study examined the company's use of AI algorithms to personalise the shopping experience. By analysing customers' browsing and purchase histories, the recommendation engine delivers targeted product suggestions. These personalised interventions were found to increase customer retention and satisfaction.

## 7. CONCLUSION

This study investigated AI adoption among footwear retailers in the UMC region using a structured questionnaire. The objectives were to assess the extent of AI use and to identify associated opportunities and challenges. Findings indicate a growing shift toward omnichannel trading as retailers seek to maintain competitiveness. Respondents reported that AI is particularly valuable for inventory management. However, significant challenges persist: intensified competition from large e-commerce platforms (e.g., Amazon, Flipkart) and a deficit in technical knowledge among some retailers, which limits their ability to exploit AI benefits fully. Future interventions should address capacity building and platform access to enable broader, effective AI adoption in the UMC footwear retail sector.

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