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Online Adoption in E-Tailing: Determinants and Emerging Research Directions in Rural and Emerging Economies

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ABSTRACT

The rapid expansion of e-tailing has significantly transformed retail eco-systems worldwide however its adoption remains uneven across urban and rural contexts. Although prior studies primarily uses technology acceptance models to explain e-tailing there is limited synthesis of broader determinants such as trust, infrastructure, policy support and socio-cultural influences particularly with emerging and rural market contexts. The current review integrates literature on e-tailing adoption across rural economies. The literature pays a special focus on rural transformation, place based policy intervention, digitalization of everyday life and structural inequalities. The review paper is to identify the determinants of e-tailing adoption in rural India and to identify the critical factors that shape consumer participation and satisfaction in e-tailing.

KEYWORDS: *Rural, e-tailing, technology adoption, online adoption.*

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1. INTRODUCTION

The widespread diffusion of digital technologies has extensively redefied retail system across the world. E-tailing broadly understood as buying and selling of good and services through online platforms has evolved from distribution channel into a key pillar of modern retail ecosystems. The expansion of broadband connectivity, rapid diffusion of smartphones, emergence of digital payments and advancements in logistics systems have significantly lowered search costs and transformed nature of interactions between consumers and retailers. As a result, online shopping is no longer confined to urban consumers and is increasingly emerging as a widespread market phenomenon, carrying important implications for rural integration and consumer well being.

India's e-commerce market is among the fastest-expanding segments of the digital economy and still holds considerable growth potential, leading firms to place increasing emphasis on enhancing customer satisfaction and service quality (Mishra et al., 2023). Rural internet has expanded significantly reaching to 398 million with 96.8 % villages having 4G connectivity. However despite of this improved infrastructure digital literacy remains very low in rural areas- only 25 % of rural households are digitally literate compared to 61% of urban households (Telecom, 2024). Notably 60% of new online shoppers since 2020 and 45% of total orders have come from Tier 3 and smaller cities, with seller participation rising from these regions (IBEF, 2025). Since 2020 3 of the 5 new shoppers hail from tier 3 or smaller cities (NSS survey, 2025). Inspite of this the online shopping penetration in the rural areas is far beneath what is currently seen in urban areas. Hence the study is conducted to review the determinants leading to the adoption of e-tailing in rural areas.

2. Online adoption in rural economies

E-tailing has transformed traditional consumption patterns by offering consumers greater convenience, varieties of products at effective and transparent price. Prior research suggests that e-tailing has

transitioned from a traditional retail route to core component of modern retail system particularly in urbanized markets (Beckers et al., 2026, Han & Li, 2020). Despite the global expansion of e-tailing, its adoption remains uneven across geographical contexts with a persistent rural urban divide. When urban consumers benefit from superior digital infrastructure, greater internet accessibility, higher level of digital literacy, all of which collectively contribute to higher rates of online shopping adoption. In contrast, rural consumers often encounter infrastructural limitations, restricted retail accessibility, delivery related challenges, and lower familiarity with digital technologies resulting in slower and selective adoption of e-tailing (Rundel et al., 2024; Khan & Syed, 2018). For rural consumers e-tailing adoption is driven by necessity rather than preference as online channels help them overcome the limited availability at physical stores (Beckers et al., 2018, Zheng & Ma, 2021). Previous studies on online shopping have focused on urban residents and these findings are hard to be generalized for rural residents as both rural and urban residents possess different characteristics regarding economic conditions, education levels, and accessibility of Information & Communication Technologies (ICT) infrastructure. Urban residents have option to purchase the products in various shopping malls during regular rest days. However, in rural areas, physical stores are not well developed, and few products are not available. Because of farm activities throughout the year, rural residents may not travel to cities for purchasing. As a result, rural residents usually purchase commodities and services via traditional channels such as local brick-and-mortar stores or scheduled rural fairs (Zheng & Ma, 2021).

3. Drivers of E-tailing Adoption in Rural Areas

In rural markets, adoption of e-tailing is influenced by an combination of structural, economic and behavioural drivers that influence consumer's willingness and ability to engage with digital retail platforms. Unlike urban consumers whose adoption is motivated by convenience and life style considerations, rural consumers often adopt online retail as a response of contextual constraints, including limited retail infrastructure, restricted product availability and geographical isolation. The reviewed literature implies that rural e-tailing adoption is shaped by necessity driven motivations, access related benefits and various social and economic considerations.

3.1. Limited access to physical retail and product availability

One of the significant drivers of e-tailing adoption in rural areas is limited availability of physical retail infrastructure. Prior research indicates that the rural consumers experience limited product variety and fewer retail options due to geographic isolation and low population density. As a result, online shopping acts as a compensatory mechanism by providing rural consumers with products that may not be available in the local retail market. Research adopting a spatial perspective indicates that that consumers residing in geographically less accessible areas tend to rely more on e-tailing to overcome local retail scarcity (Beckers at al., 2018). Similarly studies focusing on rural markets suggests that online channels significantly broaden consumption choices for villages and small town residents particularly for specialized and non essential goods (Rundel et al., 2024, Zheng & Ma, 2021). This access driven motivation distinguishes urban from rural context in terms of e-tailing adoption whereas abundant physical retail infrastructure reduces dependency on e-platforms.

3.2. Convenience and time saving benefits

An important factor that drives the rural consumer for e-tailing adoption is convenience. The rural consumer has to travel to cities or else has to cover huge distance to purchase a product. Studies examining adoption behaviour suggests that the ability to shop remotely reduces travel time and minimizes transportation cost ultimately enhances the perceived usefulness of e-tailing for consumers with limited retail infrastructure and restricted access to physical market places (Han & Li,2020). In rural settings, convenience is more closely associated with necessity than with lifestyle orientation. The benefits of reduced time and effort expenditure outweigh concerns related with delivery delays or limited digital literacy.

3.3. Price sensitivity and economic considerations

Economic factors play an important role in shaping rural e-tailing adoption. Rural consumers generally display greater price sensitivity because of lower income and restricted local market competition. The availability of price comparison tools, discounts and competitively priced products on online platforms make e-tailing an attractive option for price sensitive consumers. Research focusing on developing economies and India highlights that competitive pricing and promotional offers significantly promote the adoption of e-tailing especially for non-urban consumers (Khan & Syed, 2018).

4. Barriers to E-tailing Adoption in Rural Areas

Although e-tailing offers several potential benefits for rural consumers adoption remains restricted due to multiple structural, technological and behavioural challenges. The literature consistently highlights that

adoption of e-tailing in rural areas is not solely determined by consumer willingness; rather it is influenced by systematic factors including infrastructure gaps, logistical barriers and digital capability constraints. These barriers lead to partial usage of e-tailing instead of complete adoption of e-tailing.

4.1. Limited Digital Infrastructure and Connectivity

Inadequate digital infrastructure is widely recognized as a major barrier to rural e-tailing adoption. In many rural regions lower internet penetration, unreliable connectivity and inadequate access to digital devices hinder consumer's ability to participate in online platforms. Research on digital inequality suggests that gaps in infrastructure create disadvantages for rural population thereby limiting their ability to access and consistently use e-tailing services (Sousa et al., 2020). Such infrastructural constraints are specially pronounced in developing and emerging economies as rural areas usually lag behind urban areas in broadband penetration and mobile internet quality.

4.2. Logistical and Delivery constraints

Challenges associated with logistics represent a major obstacle to rural e-tailing adoption. Studies frequently point to delayed deliveries, limited service coverage, high delivery costs and inefficient last-mile logistics in rural regions. Research focusing on small towns and villages indicates that delivery constraints significantly affect user experience and satisfaction, discouraging repeat usage (Rundel et al., 2024). The delivery process in rural regions is further complicated by the lack of standardized addresses and reliance on third party logistics, thereby reducing the perceived reliability of e-tailing platforms.

4.3. Digital skill gaps and limited technological literacy

Low level of digital literacy significantly hinders rural consumers to independent adoption of e-tailing. Research indicates limited familiarity with smartphones, online interfaces and digital payment systems often result in hesitation and dependence on others. Studies on technology adoption highlights that low perceived ease of use and high complexity negatively influence consumers' confidence in using online shopping platforms (Sousa et al., 2020; Hsieh et al., 2013). Consequently, e-tailing adoption in rural areas often occurs through assisted mechanisms where friend and family members or intermediaries help facilitate the transaction.

5. Future research agenda

Future research on rural adoption of e-tailing can contribute to advancing the field in several ways. First scholars should adopt clear and context-sensitive definitions of rurality by explicitly specifying whether rural areas are defined based on administrative boundaries, spatial characteristics or socio economic criteria. Such clarity would improve comparability across studies and support more robust theoretical development.

Second future research should go beyond binary rural-urban comparisons and examine the heterogeneity within rural markets by considering factors such as income levels, education, age, and levels of digital exposure. This would provide a deeper and more nuanced understanding of e-tailing adoption trajectories across diverse rural consumer segments.

Third, future research should place greater emphasis on assisted adoption mechanisms, including the role of social networks, intermediaries and shared access to digital resources. Analyzing these processes can help explain how rural consumers overcome adoption barriers and how their independence in using e-tailing platforms develops over time.

Finally, there is need for longitudinal and mixed-method research designs to examine the sustainability and long term consequences of rural e-tailing adoption, including its effects on consumption patterns, well-being and rural inclusion. Such research can offer important insights for policy makers and platform providers aiming to develop more inclusive and accessible digital retail strategies.

6. Conclusion

This review brings together prior research on e-tailing adoption in rural areas. Although a rapid growth is observed worldwide in digital retail, research focusing on rural consumers remains limited. This review draws attention to the adoption patterns in rural areas which differs from those typically observed in urban settings.

The finding suggests that the rural consumers often turn to e-tailing out of necessity due to restricted access to physical retail outlet, geographic isolation and infrastructural limitations. E-tailing can improve product accessibility and convenience for rural consumers and may also contribute to better overall well-being. Structural and capability related barriers, including poor digital connectivity, logistics limitations, low digital literacy and concerns about reliability, frequently lead to selective or assisted usage. Consequently the dynamics of adoption in rural contexts differ significantly from the patterns commonly observed in rural markets.

The findings further indicate considerable conceptual and empirical shortcomings in current research. In many studies rural contexts are defined only

indirectly rather than through clear definition which restricts cross study comparisons and constraints the advancement of theoretical understanding. In addition, existing research has given relatively limited scholarly focus to assisted adoption process and the long term sustainability of e-tailing use in rural areas. By bringing together fragmented findings and presenting a conceptual framework, this review enriches the understanding of rural e-tailing adoption and highlights potential pathways for future research and policy initiatives aimed at strengthening inclusive digital retail systems.

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