



Comparative Study of E-Commerce Business Strategies in Bihar

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ABSTRACT

It has become one of the significant economic drivers in India's economy, where rapid digital penetration has disrupted the retail ecosystem. However, its development experience is not uniform across regions, with states like Bihar providing challenges as well as opportunities. This article explores actual business strategies for e-commerce in the state of Bihar in the Republic of India, home to a fledgling digital economy but also a region burdened with infrastructural inadequacies, low digital literacy, and limited consumer trust. It helps to compare e-commerce in the local context through the lens of well-known theories of e-commerce, which cover aspects like market entry and penetration, consumer needs and engagement, logistical infrastructure challenges, and others. A mixed-method approach is used, and the data from 50 respondents, including business owners, business managers, and consumers, are analysed to gain insight into the strengths and weaknesses of several strategies. Robust regional differences in e-commerce development are evident, which are related to peripheral conditions including penetration of the internet, economic development, delivery infrastructure, and competitiveness of brick-and-mortar retail. The ability to adopt DH DMP solutions varies greatly between urban and semi-urban areas compared to rural regions, with urban and semi-urban areas having been exposed to advanced connectivity systems, leading to higher adoption rates than rural counterparts, who still have issues regarding accessibility and trust on digital solutions. The research emphasises the important shifts in a business strategy that should be localised, an attitude towards an upliftment of digital payments, and a partnership between governmental and private sectors to strengthen the logistical network. Key policy recommendations include support for investment in digital infrastructure, consumer awareness programs, and incentives to local entrepreneurs to support the e-commerce ecosystem development in Bihar. Businesses addressing these challenges can tap into Bihar's uncharted markets while contributing to the larger digital economy.

1. Introduction:

By changing how we buy and sell, e-commerce has brought unprecedented convenience to consumers and new avenues of growth, innovation, and market penetration to businesses. India has become one of the fastest-growing e-commerce markets over the last 10 years due to greater internet penetration, more smartphone use, and a booming middle-class population. The rise of digital payment systems, government programs like Digital India, and a boom in start-up activity have also made this transition to online retail faster than it would have otherwise been. Despite this, e-commerce trends are not consistent across the country. Though metro and progressive states are adopting the latest technologies at lightning speed, states like Bihar are an exception with their own socio-factors and behaviour towards consumer, infrastructure for mobility and travel solutions, etc. Bihar, among the most populous states in India, has potential for e-commerce growth. However, several challenges, such as low internet penetration, poor logistics infrastructure, low levels of digital literacy, and a preference for offline retail, have impeded its growth. While e-commerce is ubiquitous in more developed states, even the least developed regions are increasingly connected; Bihar is still heavily reliant on traditional retail markets. Nonetheless, Bihar's digital commerce market is slowly making headway due to the rise in smartphone usage, low-cost internet availability due to programs such as BharatNet, and rising consciousness about online shopping. Bihar represents a huge opportunity, like a sleeping giant, for e-commerce growth in the leading digital age with increased expectations and changing consumer attitudes for a wide array of businesses if organisations could crack and manage the respective region squares for any and every account of limitations. Logistics and supply chain management acts as the backbone of an e-commerce operation, and in Bihar, its role becomes even more significant. Unlike metro cities that enjoy strong delivery networks to ensure last-mile connectivity, such logistic bottlenecks in Bihar are especially evident in rural and semi-urban areas. Timely deliveries are impeded by poor road infrastructure, unreliable courier services, and a lack of large fulfilment centres. Another challenge is payment challenges that are an important push for e-commerce, but less cash-on-delivery (COD) for online transactions is yet to be fully embraced in Bihar. Product authenticity, return policies, and digital fraud lead to trust issues, which hamper consumer confidence in online shopping and require businesses to establish reliability and customer trust. Even with such challenges, there aren't signs of progress. Hyperlocal delivery models, regional language marketing, and flexible payment options are some of the groundbreaking strategies businesses are implementing to enter Bihar's e-commerce space. The presence of major e-commerce platforms like Amazon and Flipkart and regional players has extended digital commerce beyond urban centres. Nonetheless, detailed data is needed to assess the efficiency of various business policies and key performance conformance. Therefore, this study attempts to objectively evaluate the existing practices of e-commerce in Bihar, including factors such as market maturity, consumer responsiveness, logistical challenges, etc. This study would analyse strategies of both the government and the e-commerce companies and, based on their strengths and weaknesses, would identify the very limited set of barriers that are hampering e-growth in Bihar and suggest

policy measures that can lead to a stronger digital economy. This study will be useful for the policymakers, business owners, investors, and digital commerce platforms. An insight into what facilitates or deters e-commerce in Bihar will help businesses fine-tune their strategies and tailor their offerings to local consumers demands. Additionally, the findings from this study can assist in the strategic planning of government and private-sector interventions to build Bihar's digital infrastructure, increase financial literacy, and foster a more inclusive and sustainable e-commerce sector. In light of the changing landscape of e-commerce, Bihar can establish itself as a prominent digital marketplace with the right approach. The potential of e-commerce lies in addressing logistic challenges, digitisation of financial inclusion, and building consumer confidence. By providing an in-depth insight into the digital commerce ecosystem of the region, stakeholders such as enterprises and policymakers can explore the e-commerce landscape and accordingly create social solutions that contribute towards sustainable growth for the digital commerce ecosystem of their region, particularly in Bihar.

2. Review of Literature:

As in other parts of India, the growth of e-commerce has been swift and dynamic; however, the system operates differently across different regions of the country, as pointed out by Chatterjee and Kumar (2019), who attribute Bihar's slowness in adopting e-commerce to economic issues and a lack of digital infrastructure. Singh and Raghavan (2020) provided insights into the urban-rural digital divide in India, concluding that e-commerce adoption in Bihar is significantly impacted by limited internet penetration, digital illiteracy, and socio-economic conditions. Sharma and Gupta (2021) studied the impact of rising internet access in smaller towns on the development of e-commerce. They also found that even as Tier-2 and Tier-3 cities are on the rise, infrastructural and connectivity constraints exist in Bihar. Verma & Jha (2018) examined the effects of digital payment systems like UPI & mobile wallets on online shopping. Digital financial literacy and trust issues are the major challenges in Bihar, they found. An analysis on policy extent is given by the Ministry of Commerce & Industry (2021) on the Indian government's initiatives like Digital India, Startup India, and BharatNet, which notes that they have impacted Bihar's e-commerce ecosystem—but the impact has been modest; however, they have been able to show some high-end growth potential. Jain and Bose (2019) studied rural e-commerce entrepreneurship and reported that although local entrepreneurs are using digital platforms, they face logistical and financial limitations when attempting to grow their businesses in Bihar. Mehta and Srivastava (2022) studied logistical problems of Bihar's e-commerce sector, asserting that a lack of adequate road connectivity, erratic courier services, and ineffectual last-mile delivery systems limit market penetration. Das and Roy (2020) on consumer trust in e-commerce transactions and found out that consumers from rural Bihar are reluctant to engage in e-commerce due to the risk of being cheated, low digital literacy, and lack of grievance redressal mechanisms. Bansal and Kapoor (2019) explored price sensitivity by exploring e-commerce markets and found that, in Bihar, consumers care more about affordability than brand loyalty; thus, it is vital to adopt cost complementary strategies to ensure profits with high sales volumes. Reddy and Malhotra (2021) also compared marketplace versus inventory-based e-commerce models and found that hybrid models that combine inventories at the warehouse level with a marketplace layer are more effective because of limitations in infrastructure and the supply chain in Bihar. Based on the use of WhatsApp and Facebook among other platforms, e-commerce marketing in small businesses across Bihar has been reported in Khan and Prakash (2020), where they demonstrated that the most effective communication channels within the e-commerce marketing process were social networking sites. Aggarwal and Yadav (2022) discussed mobile commerce, suggesting mobile-first e-commerce strategies to reach Bihar's rural consumers, where smartphone penetration is exceeding that of broadband access. Kumar and Mishra (2019) calculated and presented a comparison of e-commerce penetration in Bihar with other states and found that while e-commerce penetration is low in Bihar, it has great potential because the state has a large pool of consumers. Joshi and Patel (2020) investigated GST's impact on small e-commerce and found that compliance costs and complexities of taxes exist as key roadblocks for small online e-commerce companies in Bihar. Arguing that digital commerce has yet to make significant inroads into the socio-economic structures in Bihar, Sen and Ghosh (2021) emphasised the importance of regional languages for the accessibility of e-commerce, suggesting that Bhojpuri and Maithili, if incorporated in e-commerce platforms, could significantly facilitate adoption. Das and Nair (2018) examined the continued preference for cash-on-delivery (COD) in Bihar, finding that distrust in digital payments by consumers keeps COD as the payment method of choice, which raises logistical costs for firms. Singh and Raza (2022) also examined gender-based disparities in undertaking digital commerce, which concluded that increased financial dependence and lower levels of digital literacy among the women of Bihar subjected them to greater challenges in undertaking e-commerce. This indicates the outcomes of the digital literacy program and e-commerce knowledge among women on the establishment of a proper training program, which leads to adoption in rural Bihar in a study by Tripathi and Dubey (2019). According to Roy and Choudhury (2021), hyperlocal e-commerce models can contribute to small businesses in Bihar, as long as they are backed by localised logistics and marketing strategies. Policy recommendations to improve the e-commerce sector in Bihar were outlined by the Government of Bihar, Economic Survey (2022), illustrating that there is a need for better infrastructure, initiatives for digital literacy, and financial incentives to foster Bihar's e-commerce.

3. Data Analysis:

i. Demographic Profile of Respondents

Table 1 shows Analysis of demographic variables (age, gender, and profession) and their associated percentage. Age Distribution: Most of the respondents are in the range of 21-30 years (40%), which shows that young adults who are tech-savvy and active in digital markets are the largest group. This segment (aged 31-40) boasts 30% of the population, which includes young, mid-career professionals and entrepreneurs who are financially stable and have formed consumer habits. 20% of the sample belongs to the under-20 category, indicating the existence of youngsters, who are likely to be either students or in their initial stages of the job market embracing e-commerce and digital platforms. The smallest group, aged over 40 years, only includes 10%, indicating less involvement from older people. The sample consisted of 60% males and 40% females. That suggests more men than women participated in the demographic surveyed, potentially attributable to disparities in digital engagement, economic independence, or consumer habits by

gender. The profession variable shows that 50% of respondents work in e-commerce, implying a relatively high number of industry professionals. Of these, 30% are business owners, indicating that a significant number of respondents are involved in entrepreneurship, potentially using digital platforms to grow their business. The remaining population of 20% are consumers, who are the end-users of e-commerce services. The prevalence of professionals and business owners in the dataset suggests both a career and entrepreneurial interest in e-commerce.

Table 1: Demographic Profile of Respondents

	Demographic Variable	Percentage
Age	21-30 years	40%
	31-40 years	30%
	Under 20 years	20%
	Over 40 years	10%
Gender	Male	60%
	Female	40%
Profession	Employed in E-commerce	50%
	Business Owners	30%
	Consumers	20%

ii. Consumer Behaviour in E-commerce

Table 2 emphasises consumer behaviour across urban, semi-urban, and rural areas, submitting four fundamental factors contributing to price sensitivity, convenience, trust, and product variety. By region, the highest price sensitivity was from the rural sector, at 80 percent, demonstrating that affordability is key to buying. Risk-averse consumers passionate about budget-friendly products account for high price sensitivity at 70% among semi-urban consumers. This is because urban consumers, who comprise 60%, are the least price-sensitive, with larger purchasing power and possibly due to higher prioritisation on factors such as convenience and brand reputation. Urban consumers who enjoy the most options, from online to in-store to home delivery value convenience the most (70%). Semi-urban consumers give marginally less weight to convenience at 60% and continue to depend on both digital and conventional retail channels. Convenience is the least significant factor in rural areas, at 50%, where traditional marketplaces and local stores continue to hold sway. Urban consumers see a validation on trust; 50% of them say they take the brand's trust into account when buying. Semi-urban consumers trust brands marginally less (45%) and place more faith in word-of-mouth and local networks for brand credibility. Rural consumers have the lowest trust levels, at 40%, possibly due to a lack of exposure to established brands and a mistrust of online shopping and digital transactions. Since urban consumers are focused on variety, they care about having access to different brands and options, as 60 percent of cutovers would prioritise product variety. Semi-urban consumers tend to place somewhat lower value on product variety (50%) as they might have limited options when it comes to making a purchase. The least interested group is made up of rural consumers; 40% prefer to buy only some products, as they are more likely to choose their previous purchases or the essential purchases that they need than try out the abundant range of products available. It also indicates urban consumers seek convenience and product variety, while semi-urban consumers are more evenly set between price sensitivity and convenience, supported through networks of trust. The second segment watches prices very closely, emphasising the importance of affordable value when making their buying decisions, and they place much less emphasis on convenience and product variety. This data can help companies craft regional strategies price wars in small towns, access in semi-urban areas, and convenience and diversity for urban customers.

Table 2: Factors Influencing Consumer Behaviour in E-commerce

Factor	Urban	Semi-Urban	Rural
Price Sensitivity	60%	70%	80%
Convenience	70%	60%	50%
Trust	50%	45%	40%
Product Variety	60%	50%	40%

4. Conclusion and Policy Recommendations:

The results emphasise that e-tailing companies working in Bihar have to overcome major hurdles, including infrastructure constraints and trust issues, which are considerably limiting e-commerce penetration, especially in rural segments. Urban areas are experiencing higher penetration, while rural

consumers are addressing logistical challenges, lack of awareness, and preference for traditional shopping. Cost leadership and product differentiation strategies translate into a competitive advantage for businesses, especially consumers who are sensitive to price, suggesting that there is a necessity for the expansion of e-commerce to be localised in nature. Improvements in logistics and infrastructure are essential to address these challenges. Government-private collaboration can plug gaps in transportation networks, help establish digital connectivity, and boost last-mile delivery services in rural Bihar. Accessible road infrastructure and courier services will ensure the reach of e-businesses. In turn, building consumer trust is critical for boosting adoption rates in rural regions. Awareness campaigns can also create awareness among the general public about the advantages and safety of online shopping. Government-backed grievance redressal mechanisms and bolstered consumer protection laws can also help in enhancing the trust level in digital transactions. By building digital payment infrastructure and financial literacy, they can encourage rural consumers to participate in e-commerce, he said. Encouraging the use of UPI, mobile banking, and local digital wallets will make adoption easier and mitigate risks in online transactions. Promoting local e-commerce entrepreneurship can continue supporting growth. Establishing incentives, training opportunities, and fiscal support for small businesses and local entrepreneurs will help carve a place for them in the e-commerce world. By tapping into the regional supply chain and linking local producers to online channels, new economic possibilities can emerge, making e-commerce more inclusive and sustainable across the state of Bihar.

5. References:

- Bansal, R., & Kapoor, A. (2019). *Price sensitivity and consumer preferences in e-commerce: A regional analysis*. Journal of Consumer Economics, 9(4), 98-112.
- Chatterjee, P., & Kumar, R. (2019). *E-commerce growth in India: Regional disparities and market penetration*. Journal of Digital Commerce, 12(3), 45-60.
- Das, B., & Roy, C. (2020). *Consumer trust and online shopping behaviour in rural India: A study of Bihar*. Digital Consumer Studies, 11(1), 65-80.
- Das, P., & Nair, R. (2018). *Cash-on-delivery as a preferred payment mode in Bihar: Implications for e-commerce businesses*. Journal of Retail & E-commerce, 9(3), 119-135.
- Government of Bihar, Economic Survey. (2022). *Strengthening Bihar's e-commerce ecosystem: Policy recommendations and growth strategies*. Patna: Department of Economic Affairs.
- Jain, P., & Bose, K. (2019). *E-commerce and entrepreneurship in rural India: A case study of Bihar*. International Journal of Business Innovation, 7(3), 132-147.
- Joshi, D., & Patel, K. (2020). *Impact of GST on small e-commerce businesses in India: Challenges and opportunities*. Economic Policy Review, 12(1), 67-82.
- Khan, M., & Prakash, L. (2020). *The role of social media in e-commerce business growth in Bihar*. Social Media & Business Journal, 10(3), 55-72.
- Kumar, R., & Mishra, V. (2019). *E-commerce penetration in Bihar: A comparative study with other states*. Indian Journal of Business Research, 8(4), 89-107.
- Mehta, R., & Srivastava, S. (2022). *Logistics and supply chain challenges in Bihar's e-commerce sector*. Journal of Supply Chain Management, 14(2), 84-102.
- Ministry of Commerce & Industry. (2021). *E-commerce development in India: Policy interventions and regional impact*. Government of India Report.
- Reddy, V., & Malhotra, D. (2021). *Comparative analysis of marketplace and inventory-based e-commerce models in India*. Business Strategy Review, 13(1), 78-95.
- Roy, A., & Choudhury, N. (2021). *The rise of hyperlocal e-commerce in Bihar: Opportunities and challenges*. Journal of Business & Regional Development, 13(2), 72-91.
- Sen, T., & Ghosh, M. (2021). *The significance of regional language content in digital commerce: A case study of Bihar*. Linguistic & Digital Studies, 14(2), 78-94.
- Sharma, N., & Gupta, A. (2021). *Internet penetration and its influence on e-commerce adoption in emerging markets*. International Journal of Business and Technology, 15(1), 112-130.
- Singh, A., & Raghavan, M. (2020). *The urban-rural digital divide and its impact on e-commerce accessibility in India*. Digital Economy Review, 8(2), 78-92.
- Singh, M., & Raza, P. (2022). *Gender-based disparities in digital commerce participation: A study of Bihar*. Gender & Digital Inclusion, 16(1), 58-74.

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- Tripathi, K., & Dubey, S. (2019). *Digital literacy and e-commerce awareness in rural India: The role of training programs*. Journal of Information Technology & Society, 11(3), 88-106.
 - Verma, S., & Jha, P. (2018). *Digital payment systems and their impact on e-commerce adoption in India*. Journal of Financial Technology, 10(4), 99-115.