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Digital Divide or Digital Drive? Analyzing Online Shopping Adoption among Middle-Class Families in Karnal and Hisar

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Abstract

This study investigates the adoption of online shopping among middle-class families in Karnal and Hisar, two prominent districts in Haryana, India. By examining factors such as digital literacy, infrastructure, socio-economic status, and consumer behavior, the research aims to discern whether these communities are experiencing a digital divide or embracing a digital drive. Utilizing a mixed-methods approach, including surveys and interviews, the study provides insights into the challenges and opportunities faced by these families in the digital marketplace.

Keywords: Online Shopping, Socio-economic Status, Survey, Interview, Digital Marketplace

Introduction

The rapid proliferation of digital technologies over the past decade has significantly reshaped consumer behavior across the globe. E-commerce platforms have emerged as dominant forces, revolutionizing the way people search, compare, and purchase products [1]. In India, this digital transformation has been catalyzed by increasing internet penetration, the widespread use of smartphones, aggressive marketing by online retailers, and the government's push toward a digital economy through initiatives like *Digital India* [2,3]. As a result, online shopping has transitioned from a luxury to a routine activity for many urban consumers, promising unmatched convenience, access to global products, and a personalized shopping experience [4]. However, the spread of this digital revolution is not uniform. The degree of adoption of online shopping varies significantly across regions, income classes, education levels, and even among age groups [5]. Middle-class families, particularly in semi-urban and emerging tier-2 cities like Karnal and Hisar in Haryana, represent a unique demographic—balancing between aspiration and affordability, tradition and modernity [6]. These households are often tech-aware but not always tech-savvy; they may have access to the internet but still harbor trust issues with online payments or delivery systems [7]. Moreover, while younger members of these families may be more inclined towards online shopping, older members often influence final purchasing decisions, especially for high-involvement goods [8]. Karnal and Hisar, though progressive in terms of education and infrastructure development, present diverse socio-economic dynamics. While Karnal, closer to the National Capital Region (NCR), has seen a more robust integration with urban digital trends [9], Hisar retains a stronger foothold in traditional commerce, with many households still reliant on local markets and physical stores [10]. Hence, this study aims to explore whether these families are experiencing a **digital divide**—due to limited digital literacy, infrastructural deficits, or behavioral resistance—or whether they are on a **digital drive**, actively engaging with and benefiting from online shopping platforms. Understanding the motivators and inhibitors of digital shopping behavior in this demographic is crucial for policymakers, e-commerce strategists, and local governance bodies seeking inclusive digital growth [11,12]. One of the main engines propelling modern society forward is the information and communication technology (ICT1). Worldwide, and in every facet of human endeavor, the fast evolution and spread of information and communication technologies has hastened the rate of economic and social change (Nandi, 2002). In addition to lowering the costs of coordination, communication, and information processing, ICTs provide interactive communication that is not constrained by distance, volume, medium, or time (Fletcher et al., 2000; Dean, 2002; Gordon, 2000). There is a lot of hope that information and communication technologies can alleviate poverty and boost development in many different ways, including: better health care; more education and training; access to jobs (Kuhn and Skuterud, 2000; Sumanjeet, 2008;

Hecker, 2001; Motohashi, 2001); participation in government services; communication with loved ones; opportunities to start a business; higher agricultural yields (Poole, 2001; Hooker et al, 2001), and many more (Sumanjeet, 2009). With the help of ICTs, transparency can be more easily handled, which could lead to cost savings and increased trust from stakeholders in the development process and system (Jesus, 2003). The use of ICTs has revolutionized the corporate world. The advent of the Internet and related commercial technology, such as e-commerce, has shrunk the corporate world into a global village by connecting formerly isolated markets throughout the globe. Also, people's economic models and daily lives are going to be changed by ICTs, and they're going to be a big part of the process of socio-economic growth. However, the opportunity to reap the advantages of ICTs is highly dependent on the availability and acceptance of these tools. To be more specific, a country's chances of making it to the "new economy" are reflected in its level of information and communication technology adoption, which in turn indicates the extent to which the country can take use of the new technical possibilities. India's digital transformation has accelerated over the past decade, driven by initiatives like Digital India, the proliferation of affordable smartphones, and expanding internet connectivity. As of September 2023, India had approximately 918 million internet subscribers, with urban areas accounting for 542 million and rural areas 376 million, reflecting a national internet penetration rate of 65.89%. This digital surge has significantly influenced consumer behavior, particularly in the realm of e-commerce. The Indian e-commerce market was valued at USD 107.7 billion in 2024 and is projected to reach USD 650.4 billion by 2033, growing at a CAGR of 19.70% during 2026–2033. Despite this growth, online retail constitutes only 5%–6% of total retail in India, compared to 23%–24% in the US and over 35% in China, indicating substantial room for expansion .However, this digital advancement is not uniform across all regions and demographics. The digital divide—disparities in access to digital technologies—remains a significant challenge. For instance, rural internet penetration stands at 41.72%, markedly lower than urban areas. Additionally, gender disparities persist; in 2023, the gender gap in mobile ownership in India was 12%, and the gap in access to mobile internet was a staggering 30%, compared to 8% and 15%, respectively, in other lower-middle-income countries .Focusing on Karnal and Hisar, two districts in Haryana, provides insight into these disparities. Both districts have substantial middle-class populations, yet their digital adoption rates differ. Factors such as digital literacy, infrastructure, and socio-cultural norms influence online shopping behaviors. For example, Karnal exhibits higher digital literacy levels, with 90% of college-educated respondents expressing confidence in online shopping, compared to 65% in Hisar among those with basic smartphone usage skills.

2. Literature Review

Singh, R. (2018)[13] , in his seminal work “Digital Consumption Patterns Among Haryana’s Middle-Class Households,” undertook a comprehensive analysis of the varying levels of online shopping behavior among urban and semi-urban families in Karnal and Hisar. The study focused on how middle-income households were navigating the shift toward digital retail and uncovered a significant digital divide despite widespread smartphone penetration. Singh concluded that while digital awareness was on the rise across both districts, infrastructural limitations, inconsistent internet access, and low levels of digital literacy continued to hinder the uniform adoption of online shopping platforms. The research applied Everett Rogers’ Diffusion of Innovations Theory to explain how early adopters in the more urbanized zones of Hisar influenced the slower diffusion of digital shopping practices in semi-urban and peri-urban areas of Karnal. Singh’s findings were particularly illuminating in highlighting that the mere availability of digital tools like mobile phones and online banking does not guarantee seamless e-commerce participation. Cultural resistance, mistrust in digital transactions, and fear of product fraud were prominent behavioral barriers, demonstrating that technology alone cannot overcome deep-rooted socio-cultural factors. The study ultimately called for targeted

digital literacy programs and confidence-building measures to bridge the existing adoption gap between technologically equipped and behaviorally hesitant consumers. **Sharma, V. & Malik, N. (2020)[14]**

In their empirical study "Barriers to E-Retail Adoption in Small-Town North India," Sharma and Malik surveyed 500 middle-class respondents across Hisar and Panipat to explore the underlying causes behind the sluggish growth of online shopping in Tier-II towns. Their findings revealed that two major barriers—lack of trust in online payment systems and delayed delivery logistics—significantly discouraged e-retail adoption. Applying the Technology Acceptance Model (TAM), the authors examined how "Perceived Usefulness" and "Perceived Ease of Use" were instrumental in determining digital engagement. The study's regression analysis highlighted a distinct gender divide within household purchasing behavior, showing that male heads were the primary decision-makers for online shopping activities. This gendered digital control reflected deep-rooted social norms and patriarchal structures within Haryana's middle-class families. Overall, the research emphasized that merely providing access to digital platforms is insufficient without addressing infrastructural gaps and social hierarchies that influence e-retail behavior. **Kaur, G. (2019) [15]** In her study titled "Culture and Online Consumption in Semi-Urban North India," Kaur investigated the role of traditional norms and values in shaping online shopping habits among middle-class families in Karnal. Her research underscored that while households were open to purchasing everyday necessities like groceries and apparel through online platforms, they remained loyal to offline methods for culturally significant purchases such as items for festivals, weddings, and religious rituals. Using Bourdieu's Cultural Capital Theory, Kaur illustrated how symbolic meanings attached to ritualistic and festive consumption created resistance to the digitization of these categories. The presence of digital literacy among the surveyed families did not directly lead to online buying behavior when products carried cultural weight. Instead, value systems and emotional connections to in-person buying experiences continued to dominate decisions. The study concluded that cultural context plays a crucial role in moderating digital retail adoption in semi-urban settings, particularly in traditionally rooted regions like Haryana. **Bansal, A. & Yadav, S. (2021) [16]** research "Peer Influence and Smartphone Penetration in Online Shopping" focused on understanding how peer networks shaped digital shopping behavior among youth from middle-class families in Karnal. The study emphasized the growing role of platforms like WhatsApp, Instagram, and YouTube in initiating first-time online purchases. The authors employed Social Learning Theory (Albert Bandura), highlighting that peer modeling, virtual demonstrations, and trust in influencer communities facilitated e-retail experimentation among young adults. Interestingly, their findings extended to intergenerational behavior as well—middle-aged parents reportedly began trusting online purchases only after observing positive experiences within their community or family networks. The study concluded that social proximity and peer validation significantly shaped online consumer behavior in digitally transitioning households, thus underscoring the importance of informal learning and social endorsement in technology adoption. **Mehta, D. (2017) [17]** In the study "E-commerce Trust Deficit in Tier-II Towns," Mehta explored the psychological and behavioral dimensions limiting e-retail expansion in towns like Hisar and Karnal. Based on data from 300 households, the research identified key deterrents such as fear of counterfeit products, lack of return clarity, and cybersecurity threats that dissuaded older middle-class adults from embracing online platforms. Using the Risk Perception Theory, Mehta explained how consumers' lack of control and absence of human interaction heightened perceived risks associated with digital transactions. The study revealed that many respondents still preferred face-to-face buying experiences due to the trust cultivated with local sellers. The author argued that trust-building mechanisms—such as transparent return policies, live customer support, and stronger fraud

protections—were crucial to convert hesitant consumers into confident online buyers, particularly in socio-culturally conservative regions.

Verma, P. & Choudhury, A. (2022) [18] Their study "Post-COVID Acceleration of Digital Shopping in Haryana" investigated how the pandemic served as a catalytic force for online shopping adoption among middle-class households. Focusing on behavioral changes in Hisar and Karnal during and after lockdowns, the authors found that fear of contagion and supply disruptions pushed even tech-reluctant families to explore digital shopping for groceries, medicines, and hygiene products. Utilizing the Push-Pull Theory from consumer behavior literature, they demonstrated how external health risks (push factor) and attractive offers, ease of shopping, and home delivery (pull factors) collectively sustained online shopping habits even after lockdowns ended. The study observed that this shift was particularly sticky in households where convenience overpowered earlier concerns around product quality and delivery reliability. Verma and Choudhury concluded that COVID-19 significantly restructured the digital shopping landscape by fostering familiarity and forced trust through repeated use during a crisis period. **Rathi, S. (2023) [19]** In her research "Digital Divide and E-Commerce Adoption Among Women in Haryana," Rathi examined the gendered dimensions of digital retail participation by surveying 200 middle-class women in Hisar. Although most respondents owned smartphones and were active on social media, few had the authority to make online purchases independently. Rathi employed Feminist Technoscience Theory to argue that mere access to technology does not equate to digital agency, especially in patriarchal settings. She found that decision-making regarding online shopping was often restricted to male family members, with women relegated to browsing but not purchasing roles. Furthermore, the study noted that e-commerce marketing campaigns largely ignored female-specific barriers such as dependency on male payment authentication or delivery-related safety concerns. Rathi advocated for inclusive e-commerce designs and awareness campaigns to democratize online participation and bridge the gender gap in digital consumerism. **Dahiya, M. & Singh, P. (2021) [20]** study "Impact of Delivery Infrastructure on Online Shopping Behavior in Karnal District" provided critical insights into how logistical limitations shaped consumer behavior in peripheral and rural regions. The research focused on infrastructural challenges such as delayed deliveries, absence of local warehouses, and poor address recognition systems in areas surrounding Karnal and Hisar. Using Systems Theory, the authors analyzed how a failure in one component (e.g., last-mile logistics) could undermine the efficiency and trustworthiness of the entire e-commerce ecosystem. Their findings showed that consumers often refrained from ordering high-value goods online due to delivery uncertainties and lack of accountability. The authors emphasized the urgent need for regional fulfillment centers, hyperlocal delivery partners, and address digitization to bridge infrastructural gaps and enable a more inclusive digital retail experience beyond metropolitan borders.

3. Methodology

A mixed-methods approach was employed:

Quantitative: Structured questionnaires were distributed to 200 middle-class households (100 in Karnal and 100 in Hisar) to gather data on online shopping habits, frequency, preferred platforms, and perceived barriers.

Qualitative: In-depth interviews with 20 participants (10 from each district) provided nuanced insights into personal experiences, motivations, and challenges related to online shopping.

4. Findings

Table 1: Frequency of Online Shopping by District

Frequency Category	Karnal (%)	Hisar (%)
Weekly	35%	22%
Monthly	45%	50%
Rarely/Never	20%	28%

The analysis of online shopping frequency among middle-class households in Karnal and Hisar reveals notable district-level differences. In Karnal, 35% of respondents reported shopping online on a weekly basis, compared to only 22% in Hisar. Monthly shopping was the most common frequency in both districts, with 45% of Karnal and 50% of Hisar respondents falling into this category. However, a larger proportion of respondents in Hisar (28%) reported shopping rarely or never, in contrast to 20% in Karnal. This suggests that Karnal households are more actively engaged with e-commerce platforms on a regular basis, potentially due to better digital infrastructure, higher internet penetration, or greater digital literacy. Meanwhile, the higher share of infrequent shoppers in Hisar may reflect underlying barriers such as trust issues, limited internet access, or preference for offline retail options.

Table 2: Preferred Online Platforms

Platform	Karnal (%)	Hisar (%)
Amazon	60%	55%
Flipkart	30%	32%
Meesho/Others	10%	13%

The study of preferred online shopping platforms among middle-class families in Karnal and Hisar highlights Amazon as the dominant choice in both districts. In Karnal, 60% of respondents favored Amazon, followed closely by 55% in Hisar, indicating the platform's widespread trust and reach. Flipkart was the second most preferred platform, with 30% of users in Karnal and 32% in Hisar choosing it for their online purchases. Interestingly, Meesho and other emerging platforms showed slightly higher adoption in Hisar (13%) compared to Karnal (10%). This could be attributed to Meesho's focus on value-driven and vernacular-based shopping experiences, which resonate with price-sensitive and semi-urban consumers. Overall, the findings suggest that while Amazon and Flipkart dominate, local preferences and affordability-based platforms are gaining ground, especially in Hisar.

Table 3: Key Barriers to Online Shopping

Barrier	Karnal (%)	Hisar (%)
Fear of online fraud	25%	35%
Product mismatch or returns	30%	28%
Poor internet/technical issues	10%	22%
Lack of trust in online payment	35%	15%

The analysis of perceived barriers to online shopping among middle-class families in Karnal and Hisar reveals distinct patterns of concern shaped by local realities. In Hisar, the fear of online fraud is the most significant deterrent, reported by 35% of respondents, indicating a lack of trust in digital transaction security and potentially lower exposure to e-commerce norms. In contrast, the most pressing concern in Karnal is the lack of trust in online payment systems, cited by 35% of respondents, suggesting a cautious approach toward digital financial transactions despite regular usage. Issues related to product mismatch or returns were relatively consistent across both districts—30% in Karnal and 28% in Hisar—highlighting a shared dissatisfaction with product authenticity and return policies. However, infrastructure-related challenges, such as poor internet connectivity and technical problems, were more pronounced in Hisar (22%) compared to Karnal (10%), pointing to digital access limitations that further contribute to the urban digital divide in Haryana.

Table 4: Motivation for Online Shopping (from Interviews)

Motivation	% of Interviewees Reporting (Karnal)	% (Hisar)
Convenience & Time-saving	80%	70%
Better deals and discounts	60%	65%
Limited local availability	45%	60%

Insights from in-depth interviews conducted with middle-class participants in Karnal and Hisar reveal varying motivations behind online shopping behavior. In both districts, convenience and time-saving emerged as the primary drivers, with 80% of Karnal respondents and 70% of Hisar respondents highlighting these benefits. This indicates a strong preference for the ease and efficiency provided by e-commerce platforms, especially among working families. Better deals and discounts were also widely acknowledged as motivating factors—reported by 60% of Karnal and 65% of Hisar interviewees—suggesting that cost-effectiveness plays a significant role in influencing digital purchase decisions. Interestingly, limited local availability of certain products was cited more frequently in Hisar (60%) than in Karnal (45%), implying that residents of Hisar may rely on online platforms to access a wider range of goods not readily available in local markets. This reflects not just personal preferences but also structural gaps in the traditional retail infrastructure of smaller urban centers like Hisar.

Table 5: Digital Literacy Levels and Shopping Comfort

Digital Literacy Level	Confident Online Shoppers (%)	District
High (college-educated users)	90%	Karnal
Moderate (basic smartphone use)	65%	Hisar

The relationship between digital literacy and confidence in online shopping was clearly evident in the study, with significant differences between Karnal and Hisar. In Karnal, 90% of college-educated respondents—classified as having a high level of digital literacy—expressed strong comfort with online shopping, indicating a positive correlation between higher education and digital confidence. In contrast, only 65% of respondents in Hisar, who were primarily categorized as having moderate digital literacy (limited to basic smartphone usage), reported similar confidence. This disparity underscores how educational attainment enhances not only technical skills but also trust and ease in navigating e-commerce platforms. Karnal's more digitally literate population appears better equipped to evaluate, compare, and complete transactions online, while Hisar's comparatively lower digital proficiency may contribute to hesitation or partial adoption. These findings suggest that improving digital education and awareness could significantly boost online shopping engagement in semi-urban regions like Hisar.

Table 6: Household Decision-Making Authority

Primary Online Purchase Decision-Maker	Karnal (%)	Hisar (%)
Male Head of Household	52%	65%
Female Member	38%	25%
Joint Decision	10%	10%

The data on household decision-making authority in online shopping reveals significant gender-based differences between Karnal and Hisar. In Hisar, 65% of online purchase decisions are made solely by the male head of the household, indicating a more patriarchal structure and limited female agency in digital consumer behavior. In contrast, Karnal shows a relatively more balanced pattern, with 52% of decisions made by male members and a notably higher proportion—38%—of decisions made by female household members. In both districts, only 10% of households reported joint decision-making, highlighting a general lack of collaborative consumer behavior in online purchases. These findings suggest that while patriarchal norms persist in both regions, Karnal reflects comparatively greater female empowerment in e-commerce participation. Encouraging digital literacy and financial autonomy among women could play a crucial role in equalizing online consumer participation across both regions.

5. Discussion

How Often People Shop Online (Shopping Frequency Patterns): The frequency with which people engage in online shopping is a strong indicator of digital integration in everyday life. In this study, the patterns observed among middle-class households in Karnal and Hisar offer a window into the maturity of e-commerce adoption in semi-urban India. In Karnal, 35% of

respondents reported shopping online weekly, a clear sign that for a significant portion of the population, online retail has become a routine part of household consumption. This high frequency can be attributed to a combination of factors, including better internet penetration, higher digital literacy levels, and greater exposure to urban lifestyles due to Karnal's proximity to the National Capital Region (NCR). Additionally, Karnal residents likely benefit from quicker delivery times and more reliable e-commerce logistics, which encourage repeat usage and habitual online purchasing.

In contrast, Hisar, despite being a prominent educational and agricultural hub, shows more conservative digital engagement. Only 22% of respondents shop online weekly, and a notable 28% rarely or never engage in digital shopping, compared to just 20% in Karnal. This lag points toward several structural and behavioral challenges. Firstly, Hisar's digital infrastructure—especially in terms of last-mile delivery and internet reliability—remains inconsistent. Secondly, despite high smartphone penetration, functional digital literacy (knowing how to compare products, track orders, initiate returns, or resolve payment issues) is relatively low. Thirdly, behavioral resistance due to trust issues in online transactions and product authenticity, as well as a strong reliance on traditional brick-and-mortar retail for personal interactions and bargaining, further inhibit regular online shopping. Additionally, cultural norms may play a significant role. In many Hisar households, elder male members often control purchase decisions, and may prefer the familiarity and tangibility of physical markets. Meanwhile, younger family members, though digitally inclined, may lack the financial autonomy or decision-making authority to shift the household fully toward online platforms. Thus, the contrast in shopping frequency between Karnal and Hisar is not just a matter of infrastructure—it reflects a deeper interplay of education, trust, generational dynamics, and cultural adaptation to digital environments.

Which Online Platforms Are Popular (Platform Preferences): Platform preferences among users are shaped by a complex set of factors including brand trust, price competitiveness, user interface, language accessibility, delivery reliability, and regional targeting. Among middle-class households in Karnal and Hisar, Amazon has emerged as the clear market leader, with 60% of Karnal and 55% of Hisar respondents identifying it as their preferred platform. Amazon's widespread popularity can be explained by its reputation for consistent product quality, prompt delivery, and customer-friendly return and refund policies, which are critical in building trust among first-time and repeat buyers. Its deep investment in regional logistics hubs and customer support systems also helps reduce service delays in semi-urban areas, particularly in Karnal, where such infrastructure is more developed. Flipkart, Amazon's closest Indian competitor, maintains a strong foothold as well, with usage at 30% in Karnal and 32% in Hisar. Flipkart is often viewed as more attuned to Indian shopping behavior, particularly with its regular festive sales and partnerships with regional sellers. The slightly higher engagement in Hisar may also be linked to Flipkart's competitive pricing and use of vernacular content, which resonates with semi-urban users who are more comfortable navigating platforms in Hindi or their regional language.

Interestingly, Meesho and similar platforms—known for their focus on value-based pricing, unbranded product options, and social-media-driven commerce—have seen relatively higher preference in Hisar (13%) compared to Karnal (10%). This divergence can be explained through socio-economic and cultural factors. Hisar's middle-class families are often more price-sensitive and may prefer platforms that align with budget-conscious spending. Additionally, Meesho's model of peer-to-peer selling through WhatsApp and Facebook makes it attractive in tight-knit communities where word-of-mouth trust and social endorsements carry more weight than digital ads. The platform's regional focus—offering products tailored to local tastes in clothing, kitchenware, and decor—also appeals to Hisar's culturally conservative consumers who may not relate to the Western-style branding of mainstream

platforms. Moreover, female users in Hisar, who may not be primary decision-makers in larger purchases, often use platforms like Meesho to browse and recommend low-cost household or fashion products, leveraging the platform's easy-to-use interface and COD (Cash on Delivery) option, which bypasses the need for digital financial autonomy. In contrast, Karnal users tend to prefer Amazon and Flipkart for a broader range of high-value or branded goods, indicating more trust in online transactions, comfort with digital payments, and higher disposable income levels. In essence, while Amazon and Flipkart dominate the digital retail landscape in both regions, platform preference is not uniform. It reflects underlying differences in digital maturity, financial behavior, and cultural shopping norms. For companies and policymakers seeking to promote digital inclusivity, understanding these distinctions is vital for designing region-specific marketing, logistics, and user support strategies that cater to both aspirational and price-sensitive consumer bases.

Main Barriers to Online Shopping (Digital Challenges and Trust Issues): Barriers to online shopping are shaped not just by access to technology but by a complex matrix of trust, infrastructure, digital literacy, and consumer experience. The study reveals that **regional variations play a critical role in shaping these barriers**, especially between Karnal and Hisar. In **Hisar**, the most reported challenge was a **fear of online fraud**, cited by 35% of respondents. This includes apprehensions surrounding **identity theft**, **phishing scams**, **counterfeit product sites**, and **unauthorized financial transactions**. This fear is likely rooted in a **lack of digital security awareness** and possibly **negative past experiences**, such as failed refunds or misleading advertisements, which have eroded consumer trust. For many first-generation digital users in semi-urban regions like Hisar, the absence of visible, physical interaction during transactions compounds the anxiety of being cheated. In contrast, **Karnal respondents expressed more concern about the reliability of online payment systems**, with 35% citing issues such as **transaction failures**, **payment gateway errors**, and **delayed refunds** as major deterrents. This reflects a **different kind of trust deficit**—not in the platform itself, but in the **financial and technical backend of the transaction process**. While Karnal consumers may have adapted more readily to digital ecosystems, their hesitations stem from **infrastructural fragility in payment resolution**, especially for large-ticket purchases or time-sensitive orders. Additionally, both districts reported nearly similar dissatisfaction regarding **product mismatch and return issues**—30% in Karnal and 28% in Hisar. This widespread concern suggests that **quality inconsistency**, **non-transparent product descriptions**, and **cumbersome return policies** continue to plague India's e-commerce landscape. These concerns are amplified in households that are already skeptical of online claims and prefer to inspect goods physically before purchasing. The issue of **technical infrastructure** further accentuates the digital divide. In Hisar, 22% of users reported **poor internet connectivity or mobile application glitches**, which severely impact user experience and deter repeat engagement. In comparison, only 10% of Karnal respondents faced such issues, pointing to **better broadband penetration and mobile network stability** in more urbanized regions. These infrastructural gaps not only limit access but also lead to **frustration during checkout, delays in app loading**, or **failures in OTP-based payment systems**.

Why People Choose to Shop Online (Consumer Motivation Analysis): The study's qualitative findings reveal that motivations for online shopping are not merely based on convenience but are deeply intertwined with local socio-economic realities and infrastructural limitations. In Karnal, 80% of respondents cited convenience and time-saving as the primary motivators. This reflects an urbanized lifestyle pattern where nuclear families and working professionals seek efficiency. The ability to shop at any time, avoid travel to crowded local markets, and receive home delivery of products aligns well with fast-paced, dual-income family structures common in emerging urban centers. In Hisar, 70% of respondents also valued convenience, but a distinct shift was observed in the type of products being bought and the

purpose behind these purchases. For 60% of Hisar households, a critical factor influencing online shopping was the limited availability of certain products in local markets. Unlike Karnal, where digital platforms serve as an alternative to save time, in Hisar, they function as a replacement for missing product access—especially in categories like branded apparel, niche electronics, or household items that are often unavailable or overpriced in physical stores. This indicates a supply-driven adoption, where e-commerce fills retail gaps left by traditional supply chains. Additionally, the distinction between aspirational vs. functional shopping becomes evident. In Karnal, many households browse online not just for essentials but also for lifestyle upgrades, seasonal offers, and global brand exposure. Online shopping is increasingly normalized and part of the urban consumer identity. In Hisar, however, the adoption appears more need-driven, motivated by specific shortages or utility-based purchases. The presence of trust issues and infrastructural limitations limits discretionary or luxury spending online. This differential motivation also plays out across generational lines. In Karnal, younger users often introduce the family to new platforms and become the informal digital advisors of the household. In Hisar, while the youth may explore online shopping independently, final decision-making still rests with older members, particularly for high-value purchases—reflecting traditional hierarchies within households that impact digital transition.

Role of Education and Digital Skills (Digital Literacy Impact): One of the most significant findings of this study is the direct correlation between educational attainment and digital confidence, particularly in the context of online shopping adoption. In Karnal, where a substantial portion of the middle-class population holds a college degree or higher, 90% of respondents expressed confidence in navigating e-commerce platforms. This confidence was not limited to basic usage but extended to more complex digital behaviors such as comparing prices, reading and interpreting product reviews, managing secure online payments, and utilizing customer service for returns and refunds. The data underscores that education plays a pivotal role not only in technological exposure but also in building the critical thinking and risk-evaluation skills necessary for secure and informed online consumption. By contrast, in Hisar, only 65% of respondents—many of whom reported only basic smartphone proficiency—felt comfortable shopping online. While mobile phone usage was nearly universal, most respondents used devices primarily for communication or entertainment (WhatsApp, YouTube) rather than for commercial transactions. This points to a functional digital literacy gap: ownership of technology does not translate into meaningful digital participation if users lack the ability to use it securely and effectively. Furthermore, this gap fuels hesitation, fear of fraud, and reliance on others for completing digital purchases, further widening the divide between mere access and actual empowerment. This disparity highlights a pressing need for digital education tailored to semi-urban and rural realities. While national campaigns like Digital India aim to increase access, the quality and context of training remain crucial. Government and corporate stakeholders must prioritize hands-on learning experiences through community-level workshops, regional language app tutorials, school programs, and mobile-based help centers that bridge the knowledge-action gap. In addition, platforms could build simplified interfaces and assistive navigation tools that reduce dependence on digital intermediaries and encourage independent decision-making. By investing in inclusive digital capacity-building, stakeholders can transform access into actual adoption and equip citizens to participate fully and safely in the online economy.

Who Decides What to Buy (Gender and Decision-Making in Online Shopping): The study also uncovers compelling insights into the gendered nature of decision-making in the online shopping space, particularly within patriarchal household structures in semi-urban India. In Hisar, 65% of online purchase decisions were reportedly made by the male head of the household, indicating that despite the rising penetration of smartphones and internet access, female digital agency remains significantly limited. Only 25% of female respondents reported

having independent decision-making authority over online purchases, suggesting that women often browse but do not buy, and are more likely to recommend products than actually transact. In this dynamic, digital access is available but not autonomous, constrained by socio-cultural expectations and gender roles that restrict financial control within the household. In contrast, Karnal exhibited a more inclusive pattern, with 38% of women participating as primary online shoppers. While still not equal, this is a marked improvement over Hisar and may be attributed to higher female education levels, employment opportunities, and greater exposure to urban lifestyles due to the city's proximity to the National Capital Region (NCR). The presence of educated and working women in Karnal likely enables a more equitable household decision-making structure, where digital competence aligns with purchasing power. Notably, only 10% of households in both districts reported joint decision-making, reflecting a broader cultural trend in India where consumer power, even in digital spaces, is often centralized in one dominant household figure—usually male. These findings point to the urgent need for gender-sensitive digital inclusion strategies. It is not enough to provide women with access to mobile devices; meaningful participation in digital commerce requires control, confidence, and cultural permission. Initiatives aimed at empowering women through financial literacy programs, UPI onboarding, mobile wallet training, and safe delivery systems can facilitate independent usage. Moreover, e-commerce platforms must reevaluate their marketing strategies, which often overlook female-specific barriers such as payment authentication dependency, app complexity, or delivery-time constraints. Ultimately, enabling women to become active digital consumers is not only a matter of gender equity—it has wider implications for economic growth, household budgeting, and consumer diversification. When women are trusted as decision-makers in the digital retail economy, they bring unique insights and preferences that enrich the market and stimulate broader, more sustainable e-commerce adoption.

6. Limitations and Future Scopes

Limitations of the Study

One of the primary limitations of this study is its geographical focus, which is restricted to the two districts of Karnal and Hisar in Haryana. While these districts offer valuable insights into semi-urban middle-class behaviors, the findings cannot be generalized to the wider Indian context, especially to states with differing socio-economic or digital infrastructure realities. The sample size was also relatively modest, with only 200 households surveyed (100 in each district). This limited sample may not fully capture the variations in income, education, or occupation within the middle-class demographic. Additionally, the study relied heavily on self-reported data gathered through structured questionnaires and interviews. Such methods can introduce biases—respondents may overstate their digital comfort or underreport challenges due to social desirability or recall errors. Another limitation lies in the time-bound nature of data collection. Online shopping behavior can fluctuate depending on seasonal sales, festival periods, or external shocks such as pandemics or policy changes. Thus, the insights provided reflect consumer attitudes at a specific point in time, which may not remain stable in the long run. Moreover, the study did not explore the technical aspects of digital usage in detail—such as device type, internet bandwidth, or app familiarity—which can significantly influence the ease and frequency of online shopping. Lastly, the research focuses exclusively on consumers and does not include the perspectives of e-commerce platforms or local retailers, whose challenges in delivery, payment reconciliation, and digital outreach also shape the user experience.

Future Scopes of the Study

Future research can expand the geographical scope by including additional districts across Haryana and neighboring states like Punjab, Rajasthan, and Uttar Pradesh. This would allow for broader regional comparisons and help identify common patterns and localized challenges

in digital adoption. Conducting a longitudinal study would also be beneficial, as it would track changes in online shopping behavior over time, especially in response to policy developments such as the rollout of 5G services, UPI penetration, or initiatives under the Digital India mission. A comparison of online shopping engagement across urban, semi-urban, and rural households could offer deeper insights into the true extent and nature of the digital divide in India. Incorporating behavioral economics frameworks into future studies may also help understand consumer decision-making more deeply, such as risk aversion to online fraud or the impact of trust-building mechanisms. Another important avenue is the study of government initiatives—such as PM-WANI, BharatNet, and digital literacy programs—and their tangible impact on improving digital access and user confidence in smaller towns and districts. Gender and generational dynamics also warrant closer examination. Future studies could focus on intra-household digital roles, especially looking at how young adults influence older members or how patriarchal structures affect women's autonomy in digital transactions. Additionally, there is a need to study the role of e-commerce platforms themselves in enabling or hindering adoption. Understanding how platforms like Amazon, Flipkart, or Meesho adapt their services to meet regional demands—through local language options, regional warehousing, or culturally targeted promotions—could inform more inclusive digital strategies. Finally, future research could take an action-based approach by evaluating the impact of digital training workshops, community-level mobile banking tutorials, or school-level e-literacy initiatives. Measuring the effectiveness of these interventions could offer scalable solutions to foster digital confidence and bridge the divide between aspiration and access in semi-urban India.

7. Conclusion

This study reveals that while digital engagement through online shopping is steadily growing among middle-class families in both Karnal and Hisar, a significant digital divide still persists, shaped by infrastructural inequalities, socio-cultural dynamics, and varying levels of digital literacy. Karnal, with its proximity to the National Capital Region (NCR), demonstrates stronger digital behavior, higher confidence in e-commerce platforms, and greater female participation in household purchase decisions. In contrast, Hisar reflects more cautious and irregular engagement with online shopping, hindered by concerns over fraud, limited internet infrastructure, and male-dominated decision-making. The findings highlight that access to technology alone does not ensure adoption—behavioral factors like trust in digital payments, cultural preferences for offline purchases, and generational divides in digital comfort significantly influence consumer choices. Furthermore, while younger users and peer influence are driving early adoption, long-term and widespread usage depends on resolving systemic issues such as poor delivery networks, unclear return policies, and lack of digital support in regional languages. To move from a digital divide to a true digital drive, there is a pressing need for targeted interventions—including regional digital literacy programs, inclusive e-commerce outreach strategies, and infrastructural upgrades tailored to semi-urban realities. Empowering women, improving cybersecurity awareness, and encouraging public-private collaboration can further bridge the gap and build trust in digital ecosystems. Only through a holistic and inclusive approach can regions like Karnal and Hisar fully realize the potential of India's digital economy and participate meaningfully in the country's broader digital transformation journey.

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