

# Digital Commerce and Sustainable Development

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## ABSTRACT

The rapid rise of digital commerce has significantly influenced sustainable consumer behavior in Kanyakumari District, as revealed by the responses of 110 participants in this study. A majority of consumers reported regular use of digital platforms such as mobile applications and websites for various transactions, including shopping, bill payments, and service bookings. Around majority of respondents indicated frequent usage, preferring a combination of mobile and web interfaces, demonstrating a growing comfort with digital tools. This shift not only saves time and effort but also reduces travel-related emissions and paper waste, thus aligning with sustainable development goals. Most of the respondents acknowledged that their use of digital services has helped them reduce their environmental impact, either through paperless billing or reduced reliance on personal transportation. Furthermore, digital platforms have encouraged the purchase of eco-friendly products of consumers stating they intentionally select items with sustainable packaging or environmental certifications when shopping online. The accessibility of e-commerce platforms has also contributed to economic inclusion by allowing even remote households to participate in modern retail activities, supporting small businesses and local vendors in the digital ecosystem. However, challenges persist; respondents cited concerns such as unreliable internet access, lack of trust in online transactions, and insufficient awareness about sustainable product choices. These barriers are more prevalent among older adults and individuals with lower levels of education or income. Despite these issues, the findings suggest that digital commerce is steadily fostering a culture of conscious consumption and environmental responsibility in the district. To sustain and enhance this progress, stakeholders must focus on improving digital infrastructure, enhancing cybersecurity, and launching targeted awareness campaigns. Overall, the study confirms that digital commerce is a viable pathway to promote sustainability and economic participation in Kanyakumari District, especially when supported by education and technology access.

**Keywords:** Digital Commerce, Sustainable Development, E-commerce Adoption, Rural Entrepreneurship, Digital Literacy

## 1. INTRODUCTION

In recent years, the evolution of digital technologies has revolutionized commerce across the globe. Digital commerce, which involves the buying and selling of goods and services using digital platforms, has become a key driver of economic and social transformation (Laudon & Traver, 2021). With the widespread use of smartphones, increasing internet penetration, and digital payment innovations, digital commerce has transcended metropolitan boundaries and penetrated rural and semi-urban regions,

including districts like Kanyakumari in Tamil Nadu. The COVID-19 pandemic further accelerated this shift by compelling consumers and businesses to adopt contactless and online transactions as a safer alternative (Statista, 2023).

Parallel to this digital transformation, there is growing global concern about sustainability and the need for inclusive, long-term development. The United Nations' Sustainable Development Goals (SDGs) emphasize responsible consumption, reduced inequalities, climate action, and economic growth (UNDP, 2015). Digital commerce intersects with these goals by offering solutions that promote environmental sustainability (through paperless billing and optimized logistics), social inclusion (by enabling access to underserved populations), and economic growth (by empowering local entrepreneurs). Thus, the convergence of digital commerce and sustainable development is increasingly being recognized as an area of strategic importance in both academic and policy discourse (Kraus et al., 2022).

In India, government initiatives like Digital India, BharatNet, and UPI have facilitated a massive digital transformation. According to IAMAI (2023), over 850 million Indians are now online, with a significant share coming from Tier II and III towns. Kanyakumari district, known for its cultural diversity and economic dependence on agriculture, tourism, and small-scale industries, has seen a notable rise in digital commerce activities. Local consumers are increasingly engaging with e-commerce platforms such as Amazon, Flipkart, and Meesho, while small businesses are utilizing WhatsApp Business, Instagram, and online marketplaces to reach wider audiences.

However, the adoption of digital commerce in semi-urban districts also faces challenges, such as inconsistent digital infrastructure, limited digital literacy, and consumer trust issues (Srinivasan & Venkatraman, 2021). Furthermore, while the use of digital platforms is growing, the extent to which consumers in regions like Kanyakumari are aware of or practice sustainability in their digital purchases remains relatively unexplored. For instance, the promotion of eco-friendly packaging, preference for local products, or reduced carbon footprint in delivery choices are rarely considered by average consumers. This raises the question of whether digital commerce in such regions is genuinely contributing to sustainable development or merely replicating traditional consumption patterns in a digital format.

This study seeks to explore the level of digital commerce adoption among consumers in Kanyakumari district and its relationship with sustainable development. It aims to assess the types of digital platforms used, frequency and purpose of online shopping, awareness of sustainability-related features, and the challenges faced in digital adoption. Additionally, it will identify how digital commerce may contribute to local economic development, employment generation, and environmental consciousness. The study uses primary data collected from 110 respondents across various demographics in Kanyakumari district, making it a region-specific analysis that adds value to existing national and global research.

By focusing on a lesser-studied region, this research contributes to the growing body of literature that links technology adoption with sustainable practices at the grassroots level. It provides insights that can inform policymakers, digital platform developers, NGOs, and educators working to promote inclusive digital growth and environmentally responsible consumption. Moreover, the findings are relevant for businesses targeting rural and semi-urban markets, helping them align their strategies with sustainable development goals.

In summary, digital commerce holds the potential to serve as a catalyst for sustainable development in India's diverse districts. However, a deeper understanding of local adoption patterns, barriers, and

consumer awareness is essential to harness its full potential. This study aims to bridge that gap in the context of Kanyakumari district.

## **2. STATEMENT OF THE PROBLEM**

Despite the rapid growth of digital commerce in India, there remains a significant gap in understanding how this transformation is influencing sustainable development, especially in semi-urban and rural districts like Kanyakumari. While consumers increasingly engage with digital platforms for shopping, bill payments, and business transactions, their awareness and adoption of sustainable practices such as eco-friendly purchasing, support for local products, and responsible consumption remain unclear. Furthermore, small businesses face challenges such as inadequate digital infrastructure, limited digital literacy, and trust issues that hinder their full integration into the digital economy. This disconnects between digital adoption and sustainable behaviour raises concerns about whether digital commerce is truly contributing to inclusive and eco-conscious development in the region. Therefore, there is a pressing need to examine the extent of digital commerce adoption among consumers and small businesses in Kanyakumari and assess its actual impact on sustainability at the grassroots level.

## **3. REVIEW OF LITERATURE**

❖ **Anand and Joseph (2024)** explored the role of digital commerce in promoting the UN Sustainable Development Goals (SDGs) in rural India. Their study emphasized that e-commerce could contribute to SDG 8 (Decent Work and Economic Growth) and SDG 12 (Responsible Consumption and Production) if digital inclusion efforts are expanded through training and affordable digital tools.

❖ **Sharma et al. (2023)** analyzed consumer behavior on digital platforms and its impact on sustainability. Their findings revealed that while consumers in Tier-2 and Tier-3 cities are increasingly shopping online, there is still low awareness about sustainable products and eco-friendly choices. The authors suggested that both government and private platforms need to promote responsible consumption patterns more actively.

❖ **Rani and Patel (2022)** examined how small-scale entrepreneurs in South India use digital platforms to expand market access. They found that e-commerce adoption among rural women-led businesses increased household income and encouraged environmentally conscious practices, such as using biodegradable packaging and reducing travel-related emissions.

## **4. RESEARCH GAP**

While numerous studies have explored the growth of digital commerce and its potential benefits in urban regions of India, limited research has been conducted on its specific impact on sustainable development in rural and semi-urban areas like Kanyakumari district. Most existing literature focuses on either technological adoption or e-commerce trends at the national or state level, often overlooking how digital commerce influences local economic empowerment, environmental responsibility, and inclusive development. Additionally, there is a lack of empirical data examining the awareness and practices of consumers and small entrepreneurs regarding sustainability in their digital transactions. This gap highlights the need for a localized, district-level study that assesses how digital commerce contributes to sustainable development goals in Kanyakumari, while also identifying the barriers that prevent its effective implementation.

## OBJECTIVES OF THE STUDY

- To study the demographic profile of consumers who use digital commerce in Kanyakumari District.
- To examine the level of adoption of digital commerce among consumers.
- To analyze the challenges faced by consumers while using digital commerce platforms.

## RESEARCH METHODOLOGY

This study adopts a descriptive research design to explore the relationship between digital commerce and sustainable development in Kanyakumari district. The primary aim is to understand the level of digital commerce adoption and its socio-economic and environmental impacts.

### Sample Size and Sampling Method:

The study is based on a sample of 110 respondents, which include consumers who actively engage in digital commerce. A convenience sampling method was used to select respondents from various towns and rural areas of Kanyakumari district.

### Data Collection:

Primary data was collected through a structured questionnaire, comprising both closed-ended and Likert scale questions. Secondary data was obtained from government reports, journal articles, and e-commerce industry publications.

### Study Area:

The research was conducted in Kanyakumari district, Tamil Nadu, focusing on both rural and semi-urban regions to capture diverse perspectives.

## 5. RESULTS & DISCUSSION

- To study the demographic profile of consumers who use digital commerce in Kanyakumari District.

Understanding the demographic profile of consumers is essential to analyse the reach and usage of digital commerce. In Kanyakumari District, factors such as age, gender, education, occupation, income, and location influence consumer behaviour towards digital platforms. By studying these variables, we can identify which groups are actively adopting digital commerce and how it varies across different sections of the population. This helps in tailoring strategies to improve accessibility and engagement in digital markets.

**TABLE 1 DEMOGRAPHIC PROFILE OF CONSUMERS**

Variable	Category	Frequency (n)	Percentage
<b>Gender</b>	Male	60	54.5
	Female	50	45.5
<b>Age Group</b>	18–25 Years	24	21.8
	26–35 Years	40	36.4
	36–45 Years	21	19.1
	46–60 Years	20	18.2
	Above 60 Years	5	4.5
<b>Education</b>	SSLC	14	12.7

	HSC	10	9.1
	UG	48	43.6
	PG	38	34.5
<b>Occupation</b>	Student	26	23.6
	Employed	30	27.3
	Self-employed	22	20.0
	Unemployed	18	16.4
	Homemaker	14	12.7
<b>Monthly Income</b>	Less than ₹10,000	18	16.4
	₹10,000–20,000	20	18.2
	₹20,000–30,000	22	20.0
	₹30,000–50,000	25	22.7
	More than ₹50,000	25	22.7
<b>Location</b>	Urban	40	36.4
	Semi-Urban	42	38.2
	Rural	28	25.5

## Source: Primary Data

Among the 110 respondents, 54.5% were male and 45.5% were female. Most of the users of digital commerce were in the 26–35 age group (36.4%), followed by those aged 18–25 years (21.8%).

Regarding education, 43.6% were undergraduates and 34.5% were postgraduates, showing that educated people use digital commerce more. In terms of occupation, 27.3% were employed, and 23.6% were students, which means working people and youngsters use it more often.

As for income, 22.7% each earned ₹30,000–50,000 and more than ₹50,000, showing that middle- and high-income groups are active in digital shopping.

When it comes to location, 38.2% were from semi-urban areas, followed by urban (36.4%) and rural areas (25.5%). This means digital commerce is growing not only in cities but also in smaller towns and villages.

➤ To examine the level of adoption of digital commerce among consumers.

Understanding the level of digital commerce adoption helps identify how actively consumers are engaging with online platforms for shopping, payments, and services. In Kanyakumari District, assessing this adoption level highlights the extent to which digital tools have integrated into everyday consumer behaviour.

**TABLE 2 LEVEL OF ADOPTION OF DIGITAL COMMERCE AMONG CONSUMERS**

Level of Adoption	Frequency (n)	Percentage
Low Adoption	18	16.4
Moderate Adoption	42	38.2
High Adoption	50	45.4
<b>Total</b>	<b>110</b>	<b>100.0</b>

## Source: Primary Data

The data reveals that among 110 respondents in Kanyakumari District, a majority of consumers (45.4%) have a high level of adoption of digital commerce. About 38.2% show moderate adoption, while only 16.4% fall under the low adoption category. This indicates that digital commerce is gaining strong

acceptance among consumers in the region, with most people actively engaging in online transactions or services.

➤ To analyze the challenges faced by consumers while using digital commerce platforms.

The widespread adoption of digital commerce has brought convenience and efficiency to consumers, but it also presents several challenges. Consumers often face issues such as lack of digital literacy, concerns about data privacy, payment failures, poor customer service, and delivery delays. Understanding these challenges is essential to improve the overall user experience and build trust in digital platforms. This study aims to analyze the key difficulties encountered by consumers in Kanyakumari District while using digital commerce platforms.

**TABLE 3 CHALLENGES FACED BY CONSUMERS WHILE USING DIGITAL COMMERCE PLATFORMS**

Challenge	Mean Score	Standard Deviation	Rank
Delayed delivery	4.1	0.85	2
Lack of trust in sellers	3.6	1.05	5
Data privacy/security concerns	4.3	0.78	1
Poor customer service	3.8	1.1	4
Complex return/refund process	3.4	1.12	6
Inadequate product information	3.2	1.09	7
Hidden charges/taxes	3	1.18	8
Technical glitches	3.9	0.96	3

**Source: Primary Data**

Data privacy/security concerns (Mean = 4.3) rank first among consumer challenges, indicating that users are highly concerned about how their data is handled and protected on digital platforms. Delayed delivery (Mean = 4.1) is the second most pressing issue, showing that timely delivery remains a key expectation for online consumers. Technical glitches (Mean = 3.9) are also a notable issue, ranked third, suggesting platform performance and reliability are areas for improvement. Poor customer service (Mean = 3.8) is ranked fourth, showing dissatisfaction with post-purchase support. Lack of trust in sellers (Mean = 3.6) also emerged as a significant concern, placed fifth. Complex return/refund process (Mean = 3.4) and inadequate product information (Mean = 3.2) are less critical but still relevant challenges. Hidden charges/taxes (Mean = 3.0) is ranked lowest, but its highest standard deviation (1.18) shows a wide variation in user experiences.

## FINDINGS

- ✓ Digital commerce is more popular among males (54.5%) than females (45.5%).
- ✓ The 26–35 age group (36.4%) forms the largest user segment, followed by 18–25 years (21.8%).
- ✓ Educated individuals, especially undergraduates (43.6%) and postgraduates (34.5%), are the primary users.



- ✓ Employed individuals (27.3%) and students (23.6%) are the key occupational groups using digital commerce.
- ✓ Users with monthly income above ₹30,000 are more active, showing a trend among middle- and high-income groups.
- ✓ Majority of users belong to semi-urban (38.2%) and urban areas (36.4%), showing growing adoption beyond metro cities.
- ✓ Among 110 respondents, the majority (45.4%) showed a high level of adoption of digital commerce.
- ✓ 38.2% of the respondents had a moderate level of adoption.
- ✓ Only 16.4% were found to have a low level of adoption.
- ✓ First Rank: Data privacy/security concerns (Mean = 4.3) — Consumers are most concerned about how their personal information is protected on digital commerce platforms.
- ✓ Last Rank: Hidden charges/taxes (Mean = 3.0) — This was the least concerning issue overall, but the high variation in responses indicates mixed experiences among users.

## SUGGESTIONS

- ✓ Create awareness programs to help older and less-educated people understand and use digital commerce easily.
- ✓ Improve safety and security in online payments to build trust among consumers.
- ✓ Strengthen internet access and delivery services in rural and semi-urban areas.
- ✓ Make apps and websites easy to use, with local language support for better understanding.
- ✓ Set up quick help centers or customer support to solve consumer problems easily.
- ✓ Conduct digital literacy workshops in local communities to educate consumers about digital commerce usage.
- ✓ Encourage small local businesses to join online platforms by providing training and support.
- ✓ Introduce government or NGO support schemes to promote safe and accessible digital commerce.
- ✓ Enhance mobile app user experience with simple layouts and clear instructions.
- ✓ Promote cashless transactions by giving incentives like cashback or reward points.
- ✓ Provide grievance redressal mechanisms for handling issues like delayed deliveries or payment failures.
- ✓ Collaborate with local internet providers to ensure strong and affordable internet connectivity.
- ✓ Run social media campaigns to build trust and spread awareness about the benefits of digital commerce.

## 6. CONCLUSION

The present study aimed to understand the demographic profile of consumers, the level of adoption, and the challenges faced while using digital commerce platforms in Kanyakumari District. The findings revealed that digital commerce is gaining momentum, especially among youth, educated individuals, and urban residents. Most consumers are moderately to highly engaged with digital platforms for their shopping and service needs. The convenience, time-saving nature, and variety of choices available are some of the key factors driving this adoption. However, the study also highlighted a number of challenges that still affect a portion of the population. These include lack of digital literacy, concerns about cybersecurity and privacy, poor internet connectivity in rural areas, and difficulty in navigating

platforms for older users. Moreover, some consumers still prefer traditional methods due to trust and habit. The insights derived from the study suggest that for digital commerce to reach its full potential in Kanyakumari District, stakeholders must focus on awareness campaigns, training for digital usage, enhancing trust through secure platforms, and improving digital infrastructure in rural areas. Special attention must be given to bridging the urban-rural divide and ensuring inclusive access for all demographics. In conclusion, digital commerce in Kanyakumari District shows promising growth, but for its benefits to be fully realized across all sections of society, a collaborative approach involving government, businesses, and consumers is essential. With the right support and improvements, digital commerce can significantly contribute to local economic development and sustainable consumer practices.

## REFERENCE

1. IAMAI. (2023). Internet in India Report. Internet and Mobile Association of India.
2. Kraus, S., Palmer, C., Kailer, N., Kallinger, F. L., & Spitzer, J. (2022). Digital entrepreneurship and the role of digital technologies in driving sustainable development. *Journal of Cleaner Production*, 351, 131569.
3. Laudon, K. C., & Traver, C. G. (2021). *E-Commerce 2021: Business, Technology, and Society*. Pearson Education.
4. Srinivasan, R., & Venkatraman, A. (2021). Digital transformation in small towns: Challenges and opportunities. *Economic and Political Weekly*, 56(3), 42–49.
5. Statista. (2023). Digital commerce in India – Facts and figures.
6. UNDP. (2015). Sustainable Development Goals. United Nations Development Programme.
7. Anitha, S., & Ramesh, B. (2022). Digital Inclusion in Rural Tamil Nadu: Challenges and Opportunities. *Indian Journal of Social Research*, 63(4), 78-85.
8. Chatterjee, S., & Bhattacharjee, K. K. (2020). Adoption of E-Commerce in India: A Study on the Socio-Economic Impact. *International Journal of Management Studies*, 7(1), 12–21.
9. IBEF. (2023). E-commerce Industry in India. India Brand Equity Foundation. <https://www.ibef.org>
10. Kshetri, N. (2021). 1 Digital transformation and sustainable development. In *Digital Transformation and Global Society* (pp. 3-18). Springer.
11. United Nations. (1987). Report of the World Commission on Environment and Development: Our Common Future. Oxford University Press.
12. Anand, R., & Joseph, A. (2024). Digital Commerce and SDG Implementation in Rural India. *Journal of Sustainable Development Research*, 12(1), 55–67.
13. Sharma, P., Iyer, R., & Thomas, M. (2023). Consumer Awareness and Sustainability in Indian E-Commerce. *Indian Journal of Marketing Studies*, 61(3), 87–95.
14. Rani, S., & Patel, V. (2022). Impact of Digital Platforms on Women Entrepreneurs in South India. *South Asian Journal of Business and Management*, 10(4), 22–34.
15. Kavitha, M., & Senthilkumar, P. (2023). E-Commerce and Rural Empowerment in Tamil Nadu: A District-Level Analysis. *Tamil Nadu Journal of Economics and Development*, 9(2), 44–59.