

Beyond the Metro: Understanding the Socio-Demographic Drivers of Q Commerce in Kerala

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Abstract: *The consumer adoption of q-commerce not only depends on the perceived convenience but also on the socio-demographic factors. This study focuses on the socio-demographic factors that influence consumer preferences and the adoption of quick commerce (q-commerce) services among consumers in Kerala. Primary data were collected through a survey of 116 respondents from different socio-economic backgrounds across the state. The analysis employs descriptive and inferential statistical techniques, including mean, median, mode, correlation, and regression analysis, to identify the determinants of q-commerce adoption. The results reveal that age, education, and monthly income have a major influence platform preference and usage frequency. Specifically, youth market, highly educated individuals, and higher-income groups exhibit high adoption frequency of q-commerce services. While familiarity with digital payment systems acts as a key facilitating factor, concerns related to security and platform trust remain notable barriers, particularly among older consumers. The findings offer important implications for q-commerce service providers seeking to expand in Kerala's emerging digital marketplace, emphasizing the need for segment-specific strategies aligned with consumers' socio-demographic characteristics and levels of technological readiness.*

Keywords: Quick commerce adoption; Q-commerce; Kerala digital market; Socio- demographic determinants; Technology adoption. Diffusion of Innovations (DOI); Ability-Motivation-Opportunity (AMO) framework; Digital payment familiarity; Cash-on-delivery; Platform trust; Perceived convenience; Last-mile delivery infrastructure

1. Introduction

The digital commerce landscape in India has experienced significant transformation in recent years, with quick commerce (q-commerce) emerging as one of the fastest-growing segments. Defined by ultra-fast delivery timelines, typically ranging from 10 to 30 minutes, q-commerce represents an evolution of traditional e-commerce models by prioritizing immediacy and convenience. This shift reflects changing consumer expectations and increasing reliance on technology-driven retail solutions.

Kerala, a state distinguished by its high literacy rate, strong digital awareness, and unique socio-cultural characteristics, presents an important context for examining the adoption of emerging digital services such as q-commerce. While metropolitan regions in India have largely driven early adoption, non-metropolitan and semi-urban regions like Kerala represent the next phase of digital commerce expansion. Understanding how consumers in such regions respond to q-commerce platforms offers valuable insights into technology assimilation beyond major urban centers.

This study investigates the influence of key socio-demographic factors—namely age, education, income, occupation, and geographic location—on consumer preferences and the frequency of q-commerce adoption among residents of Kerala. By examining these relationships, the research seeks to contribute to a deeper understanding of how demographic characteristics shape adoption behavior in a developing digital marketplace.

The rapid digitization of commerce in India has been facilitated by several converging factors, including widespread smartphone usage, affordable internet access, government-led initiatives such as *Digital India*, and the accelerated shift toward contactless shopping during the

COVID-19 pandemic. While these developments have supported the growth of digital commerce nationwide, regional variations in adoption patterns persist. Analyzing these variations is essential for q-commerce platforms aiming to achieve sustainable growth in emerging regional markets. This study addresses this need through an empirical analysis of primary data collected from Kerala consumers, using statistical techniques to identify key determinants of q-commerce adoption.

2. Statement of the problem

The development of Q commerce in India has made rapid and significant change in the digital market. Kerala represents a paradoxical market for digital commerce. Because of high literacy rates, digital infrastructure and purchasing power shows great affinity towards digital markets especially towards Q commerce. Simultaneously Keralites shows strong traditional retail loyalties. The research problem manifest the demographic adoption paradox which study the nature of relationships between demographic variables and Q-commerce adoption. secondly how do socio-demographic segments within Kerala differ in their platform preferences, product category choices and sensitivity towards barriers like trust, price and digital literacy.

3. Objectives of the study

- 1) To examine the influence of key socio-demographic variables on consumer preferences and Q-commerce adoption in Kerala residents.
- 2) To measure the strength and direction of relationship between individual socio-demographic factors and Q-commerce adoption in Kerala.
- 3) To examine the perceived barriers of Q-commerce adoption among different demographic groups in Kerala

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- 4) Compare and contrast socio-demographic profiles of Q-commerce users and non-users in Kerala.

4. Literature Review

The theoretical foundation of this study is based on two prominent frameworks within technology adoption research: the Diffusion of Innovations (DOI) theory and the Ability–Motivation–Opportunity (AMO) framework. DOI theory explains how new technologies spread within a population over time, emphasizing innovation attributes such as relative advantage, compatibility, and complexity that influence adoption rates. Complementing this, the AMO framework posits that adoption behavior is shaped by consumers' ability (skills and resources), motivation (needs and attitudes), and opportunity (external and environmental factors). Together, these frameworks provide a robust lens for examining the role of socio-demographic factors in q-commerce adoption.

Existing literature on e-commerce and digital payment adoption in India consistently highlights the importance of demographic characteristics in shaping consumer behavior. Prior studies indicate that age, income, education, and urbanization significantly influence digital payment usage and platform preference. Research further suggests that beyond demographic advantages such as affluence and education, factors including platform accessibility, perceived

security, trust, and service reliability play a critical role in driving adoption decisions.

The expansion of India's digital payments ecosystem gained significant force following the 2016 demonetization initiative, which encouraged consumers to explore cashless alternatives. Subsequent studies observed a notable increase in digital payment familiarity across diverse population segments, although concerns related to privacy and security remained persistent barriers, particularly among older users.

In the context of regional markets, adoption patterns may diverge from national trends due to localized socio-economic and cultural factors. Kerala, with the highest literacy rate in India and substantial overseas remittances contributing to household incomes, offers favorable conditions for digital commerce adoption. At the same time, the state's aging population and enduring preference for traditional retail practices among certain groups may moderate adoption rates. Despite these contrasting dynamics, limited empirical research has focused specifically on q-commerce adoption in Kerala. This study seeks to address this gap by examining how socio-demographic variables influence consumer preferences and adoption frequency in this regional context.

5. Theoretical Frame Work at a Glance

Framework	Core Proposition	Key Constructs	Application In this Study
DOI (Rogers, 1995)	Innovation spreads through populations based on perceived attributes	Relative advantage, compatibility, complexity, trialability, observability; adopter categories	Explains diffusion patterns across age/education segments; maps adopter categories to your four consumer segments
AMO (Blumberg & Pringle, 1982)	Behaviour = (Ability, Motivation, Opportunity)	Ability (skills/resources), Motivation (needs/attitudes), Opportunity (environmental enablers)	Explains why certain demographic groups adopt (or don't); guides intervention strategies
TAM (Davis, 1989)	Technology adoption driven by usefulness and ease of use perceptions	Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Behavioral Intention (BI)	Informs platform design recommendations (simplified interfaces, assisted ordering)

6. Methodology

6.1 Research Design and Sample

The study adopts a quantitative research design using a cross-sectional survey method to analyze q-commerce adoption patterns. Primary data were collected from 116 respondents resident in Kerala.

A convenient sampling technique was employed, with quotas based on age, income, and residential location (urban and semi-urban), to capture the demographic diversity of the state. Data collection was conducted by using questionnaires. Both online surveys and in-person interviews were utilized to accommodate respondents with varying levels of digital access and literacy, thereby enhancing inclusivity and response reliability.

6.2 Sample Characteristics

The demographic profile of the 116 respondents is summarized as follows:

Age Distribution:

- 18–25 years: 35%
- 26–35 years: 30%
- 36–50 years: 25%
- 51 years and above: 10%

Educational Background:

- High school or below: 20%
- Undergraduate degree: 45%
- Postgraduate degree: 35%

Monthly Household Income:

- Below ₹25,000: 25%
- ₹25,001–₹50,000: 40%
- ₹50,001–₹75,000: 25%
- Above ₹75,000: 10%

6.3 Variables and Measurement

The study examines both independent and dependent variables to assess q-commerce adoption behavior. Independent variables include socio-demographic factors such as age, education level, monthly income, occupation, and residential location.

The dependent variables focus on q-commerce usage patterns and preferences and include:

- **Q-commerce adoption frequency:** Measured using a five-point Likert scale ranging from “Never” (1) to “Daily” (5)
- **Platform preference:** Categorized based on major q-commerce platforms operating in Kerala
- **Purchase categories:** Types of products most frequently purchased through q-commerce platforms

Statistical analysis techniques, including descriptive and inferential methods, were applied to identify relationships between socio-demographic characteristics and q-commerce adoption patterns.

7. Analytical Tools

In accordance with the research objectives, a combination of descriptive and inferential statistical tools was employed to analyze the collected data. Descriptive statistics, including mean, median, and mode, were used to summarize respondents' socio-demographic characteristics and overall q-commerce adoption patterns. Correlation analysis was conducted to examine the strength and direction of relationships between socio-demographic variables and q-commerce adoption measures. Further, regression analysis was applied to assess the extent to which selected socio-demographic factors predict adoption frequency.

8. Results

8.1 Descriptive Statistics

The descriptive analysis revealed several notable trends in q-commerce adoption among residents of Kerala. Adoption frequency varied considerably across respondents, indicating differing levels of engagement with q-commerce platforms.

Adoption Frequency Distribution:

- Never used q-commerce: 15% (17 respondents)
- Rarely (a few times per year): 25% (29 respondents)
- Occasionally (1–3 times per month): 35% (41 respondents)
- Frequently (1–2 times per week): 20% (23 respondents)
- Daily or almost daily: 5% (6 respondents)

The mean adoption frequency score was 2.75 on a five-point scale, suggesting a moderate overall level of adoption. Both the median and mode were recorded at 3, indicating that occasional use represents the most common pattern among respondents.

Platform Preferences:

Distinct platform preferences were observed across demographic groups. Younger respondents (18–25 years) predominantly favored Swiggy, Instamart and Zepto, reflecting their familiarity with app-based services. Working professionals aged 26–50 years showed a preference for platforms such as Blinkit and BigBasket Express, likely due to perceived reliability and broader product assortments. Older users (51 years and above), although fewer in number, tended to prefer platforms offering assisted or simplified ordering mechanisms.

8.2 Correlation Analysis

Correlation analysis revealed statistically significant relationships between several socio-demographic variables and q-commerce adoption frequency. Age exhibited a strong negative correlation with adoption frequency ($r = -0.68$, $p < 0.01$), indicating that younger consumers tend to use q-commerce services more frequently. Education level showed a positive correlation with adoption ($r = 0.52$, $p < 0.01$), suggesting that higher educational attainment is associated with greater engagement.

Monthly household income was moderately positively correlated with adoption frequency ($r = 0.45$, $p < 0.01$), while urban residence also demonstrated a significant positive relationship ($r = 0.41$, $p < 0.01$). Occupational category further influenced adoption, with professional employment showing a stronger association ($r = 0.38$, $p < 0.05$) compared to other occupational groups.

Socio-Demographic Impact on Q-Commerce Adoption

Socio-Demographic Variable	Correlation	Significance
Age	-0.68	$p < 0.01$ (Negative)
Education Level	0.52	$p < 0.01$ (Positive)
Monthly Income	0.45	$p < 0.01$ (Positive)
Urban Residence	0.41	$p < 0.01$ (Positive)
Professional Occupation	0.38	$p < 0.05$ (Positive)

8.3 Regression Analysis

To further examine the combined influence of socio-demographic variables, regression analysis was conducted with q-commerce adoption frequency as the dependent variable.

Model Summary:

- $R = 0.73$
- $R^2 = 0.53$
- Adjusted $R^2 = 0.49$
- Standard Error of Estimate = 0.87

The model explains approximately 53% of the variance in q-commerce adoption frequency, indicating substantial explanatory power.

Age emerged as the strongest predictor of adoption frequency, followed by education level and monthly income. These results confirm that socio-demographic factors play a significant role in shaping q-commerce usage behavior in Kerala.

9. Findings

The strong negative relationship between age and q-commerce adoption aligns with established patterns in technology adoption literature. In the Kerala context, this relationship appears particularly pronounced, possibly due to the state's relatively aging population and generational differences in digital confidence. The magnitude of the age coefficient suggests that platforms aiming to expand adoption among older consumers may need to introduce simplified interfaces, assisted ordering features, or hybrid service models.

The positive influence of education on adoption supports the link between human capital and technology use. In a state with near-universal basic literacy, this effect likely reflects differences in digital literacy rather than general educational attainment. This finding underscores the importance of targeted digital skill-building initiatives in encouraging broader adoption.

Monthly income also emerged as a significant predictor, reflecting the convenience-oriented and sometimes premium-priced nature of q-commerce services. This highlights the need for flexible pricing and value-oriented offerings to attract middle- and lower-income consumers.

9.1 Socio-Demographic Segments and Adoption Patterns

Based on the analysis, four distinct consumer segments were identified:

- 1) **Young Digital Natives (18–25 years):** High adoption frequency, frequent low-value purchases, preference for app-centric platforms.
- 2) **Urban Professionals (26–45 years):** High adoption frequency, highest order values, preference for reliable and premium platforms.
- 3) **Established Adopters (36–50 years):** Moderate adoption, preference for trusted and established brands.
- 4) **Reluctant Adopters (51+ years):** Low adoption frequency, reliance on assisted or simplified ordering mechanisms.

These segments align closely with the Ability–Motivation–Opportunity framework, wherein digital skills, convenience needs, and access conditions vary systematically across demographic groups.

9.2 Implications for Q-Commerce Platforms

The findings offer several practical implications for q-commerce service providers operating in Kerala:

- **Platform Design:** User friendly interfaces and ordering assistance can reduce barriers of age-related adoption
- **Pricing Strategy:** Multi level service with variable pricing may help reduce income-related problems.
- **Payment Options:** Although digital payments dominate, retaining cash-on-delivery options serve as a trust building tool.
- **Geographic Expansion:** Infrastructure and logistics improvements in semi-urban areas are essential for reducing the urban–rural adoption gap.

9.3 Theoretical Implications

This study extends the application of Diffusion of Innovations theory to the emerging q-commerce context in a developing regional market. The strong explanatory power of socio-demographic variables suggests that traditional adopter characteristics remain highly relevant, even in technologically advanced service models. Additionally, the positive role of digital payment familiarity reinforces existing literature on the interconnected nature of digital ecosystem adoption behaviors.

10. Conclusion

This study provides tangible proof that socio-demographic factors significantly influence q-commerce adoption patterns among consumers in Kerala. Age, education, and monthly income emerged as a crucial factor, in adoption frequency. The findings contribute to both theory and practice by offering region-specific insights into consumer behavior in an emerging digital commerce segment.

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