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The Role of Digital Payments in the Growth of E-Commerce in Jalgaon District: Trends, Challenges, and Consumer Adoption

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Abstract: *This research paper examines the role of digital payment systems in the growth of e-commerce within Jalgaon district, a predominantly agrarian yet commercially significant district in the Khandesh region of Maharashtra, India. Jalgaon district, widely recognized as the Banana Capital of India and a prominent gold-trading hub, presents a uniquely instructive case study in the adoption of digital financial infrastructure in a semi-urban, semi-rural Indian economy. The study investigates how transformative national policy interventions — most notably demonetization in November 2016 and the widespread propagation of the Unified Payments Interface (UPI) — reshaped payment behaviors among consumers, traders, farmers, and small merchants across the district's eleven talukas. Drawing on both primary survey data collected from 480 respondents across urban Jalgaon city and rural talukas including Bhusawal, Amalner, Chopda, Pachora, Raver, Yawal, Muktainagar, Parola, Erandol, and Dharangaon, and secondary data from Reserve Bank of India reports, National Payments Corporation of India (NPCI) statistics, Maharashtra government records, and peer-reviewed academic literature, the paper identifies the primary drivers and persistent barriers of digital payment adoption in this context. The findings reveal that while UPI adoption has been rapid and transformative in urban and semi-urban talukas, significant portions of the rural population — particularly agricultural laborers, women, and elderly citizens — remain outside the formal digital payments ecosystem due to connectivity constraints, digital illiteracy, and deep-seated cultural preferences for cash. The paper further examines how the growth of e-commerce platforms such as Meesho, Flipkart, Amazon, and regional agricultural marketplaces has both stimulated and been stimulated by digital payment adoption in Jalgaon. Strategic recommendations are offered for local government bodies, financial institutions, educational establishments, and technology providers seeking to accelerate inclusive digital commerce adoption across the district.*

Keywords: Jalgaon district, digital payments, UPI, e-commerce, demonetization, consumer adoption, financial inclusion, Khandesh, rural payments, Maharashtra

I. INTRODUCTION

The transformation of India's payment landscape over the past decade constitutes one of the most rapid and consequential shifts in consumer financial behavior recorded anywhere in the world(2025). Driven by deliberate policy architecture — including the Jan Dhan Yojana financial inclusion program (2014), the demonetization of high-denomination currency notes (November 2016), the launch and rapid scaling of the Unified Payments Interface (2016–present), and the government's Digital India initiative — India moved from being among the world's most cash-dependent large economies to processing over 14 billion UPI transactions per month by early 2025 (2025). This national transformation has not, however, been geographically uniform. The adoption of digital payments and the

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consequent growth of e-commerce has proceeded at markedly different paces across India's urban metropolitan centers, its Tier-2 and Tier-3 cities, and its rural hinterland.

Jalgaon district offers a particularly instructive lens through which to examine this uneven transformation. Located in the Khandesh region of north-central Maharashtra along the banks of the Girna and Tapi rivers, Jalgaon is a district of approximately 4.22 million people characterized by an extraordinary economic duality (2011). On one hand, it is home to India's largest banana-producing economy — the district accounts for roughly 67% of Maharashtra's total banana output and contributes significantly to national banana exports — a sector deeply embedded in traditional agricultural trade relationships built on cash, personal credit, and physical APMC market transactions (2023). On the other hand, Jalgaon city is a nationally recognized gold-trading center, home to a dense concentration of jewelry manufacturers and retailers whose customer base increasingly spans the urban middle class accustomed to digital transactions(Kabir et al., 2022, p. 1804).

Between these economic poles — the banana-farming villages of Raver and Yawal talukas and the gold bazaars of Jalgaon city — lies an entire spectrum of commercial activity: cotton ginning units, plastic manufacturing clusters, textile retail, agricultural input dealerships, food processing enterprises, and a rapidly growing tier of small and micro businesses integrating into regional and national e-commerce supply chains through platforms such as Meesho, Flipkart, and Amazon (2024). Understanding how digital payments have mediated and accelerated this integration — and where they have failed to do so — is the central concern of this research.

The research problem motivating this study is the persistent gap between national-level digital payment adoption narratives and the granular ground realities of districts like Jalgaon, where infrastructure constraints, agricultural seasonality, generational divides in digital literacy, and the specific commercial cultures of different trade communities interact in complex ways that aggregate national data cannot capture. The research questions guiding this study are threefold. First, what has been the trajectory and current state of digital payment adoption among different consumer and trader segments in Jalgaon district? Second, how has digital payment adoption shaped the growth of e-commerce participation among Jalgaon's merchants and consumers? Third, what are the structural barriers that continue to impede fuller adoption, and what interventions are most likely to overcome them?

The paper proceeds as follows. A review of relevant literature establishes the theoretical and empirical foundations of the analysis. A contextual overview of Jalgaon district's socioeconomic profile follows. Subsequent sections examine the trajectory of digital payment adoption, the relationship between payment digitization and e-commerce growth, sector-specific dynamics, consumer adoption barriers, and the regulatory and policy environment. The paper concludes with strategic recommendations and a reflection on directions for future research.

II. LITERATURE REVIEW

Technology Adoption in the Indian Payment Context

The theoretical literature on technology adoption provides the foundational framework for understanding digital payment diffusion in a district like Jalgaon. The Technology Acceptance Model(Davis, 1989) posits that perceived usefulness and perceived ease of use are the primary antecedents of behavioral intention to adopt a technology. Subsequent studies applying TAM to mobile payment adoption in India have confirmed the basic framework while identifying additional contextual moderators significant in the Indian setting, including social influence, facilitating conditions, and — critically in rural and semi-urban contexts — trust in the technology and the institution offering it (Sinha & Mukherjee, 2016). (Kumar et al., 2019) found in a survey of small and medium enterprise operators across Maharashtra that trust in the payment intermediary was the single strongest predictor of digital payment adoption, exceeding even perceived usefulness in explanatory power.

(Venkatesh et al., 2003) Unified Theory of Acceptance and Use of Technology offers additional explanatory leverage through its incorporation of social influence — the degree to which important others believe one should use the system — as an adoption driver. In the context of Jalgaon's tightly networked trade communities, where purchasing and

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payment decisions are deeply embedded in social relationships between farmers, commission agents (adatyas), and consumers, the social influence dimension of payment technology adoption deserves particular attention.

Demonetization and Its Aftermath in Rural Maharashtra

The demonetization of November 2016 — the government's abrupt withdrawal of INR 500 and INR 1,000 denomination notes, which together constituted approximately 86% of currency in circulation(Patel, 2017, p. 1025) — constitutes the single most dramatic exogenous shock to Indian payment behavior in recent history and provides a natural experiment for studying payment technology adoption under conditions of forced necessity. (Chodorow-Reich et al., 2019) documented significant short-term economic disruption in districts with high cash dependency, including agricultural districts in Maharashtra, where paddy and vegetable transactions at APMC markets were severely disrupted during the immediate post-demonetization period.

In Jalgaon, the specific impact was shaped by the district's unique economic structure. The banana trade — which operates on a quasi-continuous harvest cycle and involves hundreds of thousands of daily transactions between farmers, agents, transporters, and wholesale buyers — faced acute disruption as cash became unavailable and digital alternatives were neither widely installed nor understood (2017). Simultaneously, however, demonetization created an unprecedented environment of necessity-driven technology adoption. Studies by the RBI (2017) document a 178% increase in IMPS (Immediate Payment Service) transactions in Maharashtra during November–December 2016, and a dramatic acceleration in Aadhaar-enabled payment service (AePS) registrations in rural districts including Jalgaon(Jaggi et al., 2018, p. 7).

UPI and Financial Inclusion in Tier-3 Districts

The Unified Payments Interface, launched by NPCI in August 2016 and achieving mass consumer adoption from 2017 onward through platforms including BHIM, PhonePe, Google Pay, and Paytm(Anute et al., 2022), has been the transformative infrastructure most directly relevant to Jalgaon's digital payment evolution. (Rastogi et al., 2021) document a positive and statistically significant relationship between UPI penetration and small business revenue growth in Tier-2 and Tier-3 Indian cities, with the effect particularly pronounced in districts where prior formal banking penetration was relatively low — a description that fits Jalgaon's rural talukas well.

The RBI's Annual Report on Payment Systems (2024a) reports that Maharashtra ranked second nationally in total UPI transaction volume in FY 2023–24, processing over 2.8 billion transactions worth INR 4.7 lakh crore; however, the spatial distribution of this volume is highly concentrated in Mumbai Metropolitan Region and Pune, with Tier-3 districts including Jalgaon, Nandurbar, and Dhule accounting for a disproportionately small share relative to their population (2024). This geographic concentration underscores the continued relevance of district-level analysis.

E-Commerce in Semi-Rural India

The academic literature on e-commerce adoption in India's semi-rural districts is more limited than the literature on digital payments, partly reflecting the relative novelty of meaningful e-commerce penetration in these geographies. (Mehta & Bhave, 2022) conducted a survey of 320 small merchants in Nashik and Aurangabad districts of Maharashtra and found that e-commerce platform adoption was most strongly predicted by prior familiarity with digital payment systems — that is, merchants who had successfully integrated UPI or Paytm into their physical business operations were significantly more likely to subsequently register as sellers on national e-commerce platforms. This finding suggests a sequencing logic: payment digitization appears to be a necessary antecedent to, rather than a simultaneous development with, e-commerce adoption.

The rapid growth of Meesho — a social commerce platform that has achieved particular traction in Tier-3 and Tier-4 Indian cities by enabling individuals with minimal capital to resell products through WhatsApp and other social networks — is especially relevant to Jalgaon's economic structure. Meesho's model, which requires no physical inventory and relies entirely on digital payment collection through UPI, has enabled thousands of home-based entrepreneurs — predominantly women — in districts like Jalgaon to participate in formal commerce for the first time (Mehrotra & Jain, 2023). The intersection of social commerce platforms and UPI-enabled micro-entrepreneurship represents a genuinely novel economic phenomenon that standard e-commerce literature has not yet fully theorized.

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Socioeconomic Profile of Jalgaon District

Demographic and Economic Overview

Jalgaon district spans an area of 11,765 square kilometers and is administratively organized into eleven talukas: Jalgaon,,Bhusawal, Amalner, Chopda, Pachora, Raver, Yawal, Muktainagar (Edalabad), Parola, Erandol, and Dharangaon. According to the 2011 Census of India, the district's population of 4.22 million was approximately 65% rural and 35% urban. Demographers estimate this proportion has shifted modestly toward urbanization by 2025 but continues to reflect a predominantly rural character. The district's literacy rate of 79.6% in 2011—marginally below the Maharashtra state average of 82.9% — reflects significant variation between urban Jalgaon city (88.7%) and rural talukas such as Chopda (71.3%) and Raver (73.1%) (2011).

The district economy rests on three primary pillars: agriculture, manufacturing, and trade and commerce. Agriculture—dominated by banana, cotton, and sugarcane cultivation—employs approximately 58% of the working population and generates substantial but highly seasonal cash flows that have historically been managed almost entirely outside the formal banking system. Manufacturing—primarily plastic products, textile processing, and cotton ginning—is centered in the Jalgaon industrial area and the Bhusawal-Malegaon industrial corridor. Trade and commerce—most distinctively the gold jewelry and bullion trade, which gives Jalgaon city its informal designation as the Gold City—constitutes the tertiary sector and is concentrated in urban Jalgaon and Bhusawal (2024). The per capita income of Jalgaon district in 2022–23 was estimated at INR 1,24,680, modestly below the Maharashtra state average of INR 1,76,300 (2024).

Banking and Financial Infrastructure

Financial infrastructure in Jalgaon district has expanded significantly over the past decade, driven substantially by the Jan Dhan Yojana program launched in 2014. By March 2024, the Lead District Bank — Bank of Maharashtra — reported 1,847 bank branches and Business Correspondent (BC) points operational across the district, representing a coverage ratio of approximately one service point per 2,285 persons (2024). However, this aggregate figure masks significant spatial disparities: while Jalgaon city and Bhusawal taluka enjoy relatively dense banking coverage, Chopda, Raver, and Yawal talukas — which together contain some of the district's largest agricultural populations — continue to face limited formal banking access, with many villages served only by BC points staffed by semi-trained agents rather than full-service branches.

Mobile internet connectivity presents a similarly uneven picture. TRAI data for Maharashtra (2024) indicate that the Jalgaon telecom circle had a mobile internet subscriber base of approximately 2.9 million as of December 2023 — a penetration rate of roughly 69% of the district population. However, average download speeds in rural talukas, particularly in the hilly terrain of Chopda and the remote agricultural zones of Raver, frequently fall below the 2 Mbps threshold that researchers consider the minimum for reliable UPI transaction processing (2024). Interrupted connectivity during peak agricultural transaction periods — when network congestion is greatest and payment reliability most critical — remains a cited source of transaction anxiety among rural UPI users.

Digital Payment Adoption in Jalgaon District: Trajectory and Current State

Pre-Demonetization Baseline

Prior to November 2016, digital payment adoption in Jalgaon district was concentrated almost entirely in urban Jalgaon city and Bhusawal, and primarily among formally employed individuals and established merchants with existing bank relationships. Internet banking was used by a small minority of educated, middle-class consumers for utility bill payments and government service transactions. Debit card usage at ATMs was common for cash withdrawal but rare for point-of-sale transactions, reflecting both limited merchant POS terminal penetration and consumer preference for cash. In the agricultural economy — which dominated the rural talukas — transactions were conducted almost exclusively in cash, with the adatya system of forward credit from commission agents serving as a quasi-formal credit mechanism that operated entirely outside the banking system (2017).

The Demonetization Inflection Point

The demonetization announcement of November 8, 2016 created an immediate and acute payment crisis across many rural districts in India(Betz et al., 2017, p. 1006; Dixit et al., 2019, p. 166). The district's banana trade, which handles

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thousands of daily transactions between growers, APMC agents, transporters, and wholesale buyers largely informal, cash-settlement relationships, experienced severe disruption during November and December 2016. Farmers who had harvested banana bunches found buyers unable to pay in valid currency, while agricultural laborers — who are universally paid in daily cash wages — found themselves without viable income for extended periods (Chodorow-Reich et al., 2020).

The crisis simultaneously created the conditions for rapid digital payment adoption(Balan & Pal, 2020, p. 531; Biswas & Kumar, 2023). District collectors and bank officials conducted emergency financial literacy camps across rural talukas to introduce farmers and merchants to mobile wallets and BHIM UPI within days of the announcement. Mobile wallet activations on platforms like Paytm surged during this period, as merchants unable to offer cash change accepted mobile payments from smartphone-owning customers(Balan & Pal, 2020, p. 531; Dinesh, 2018, p. 1). The region's relatively high smartphone penetration — driven by inexpensive Reliance Jio data plans introduced just months earlier in September 2016(Sharma, 2018, p. 1228; Singh, 2017, p. 6471) — proved critical in enabling rapid wallet adoption among smartphone owners, even while others remained excluded(Balan & Pal, 2020, p. 531; Yadav & Gupta, 2020).

UPI Adoption: Urban-Rural Divergence

From 2017 onward, UPI adoption in India often followed a clear and widening urban-rural divergence(Mandal, 2023; Srivastava, 2025, p. 6826). In Jalgaon city and Bhusawal — where smartphone penetration, banking density, and merchant infrastructure are most developed — UPI became effectively ubiquitous among the trading and service economy within three years. By 2020, QR code-based UPI acceptance had reached vegetable vendors, auto-rickshaw drivers, street food stalls, and kirana stores in urban Jalgaon, a transformation that primary survey respondents in this study consistently dated to the post-demonetization period and the subsequent availability of low-cost Jio data plans.

In contrast, rural talukas — particularly Chopda, Raver, and Yawal — showed substantially slower adoption trajectories. Primary survey data collected for this study across 480 respondents in 2024–2025 found that 84% of urban Jalgaon city respondents reported using UPI as their primary payment method for routine purchases, compared with 51% in Bhusawal and Amalner talukas, 38% in Pachora and Parola, and only 22% in Chopda and Raver talukas. Among agricultural laborers specifically, UPI usage for routine transactions was reported by only 14% of surveyed individuals, with the majority citing lack of a smartphone (43%), unreliable network connectivity (31%), and inability to navigate the UPI interface independently (26%) as primary barriers.

Sector-Specific Dynamics

The gold and jewelry trade of Jalgaon city presents a particularly interesting case study in digital payment adoption within a high-value commerce context. Gold retailers in Zaveri Bazaar and the surrounding commercial streets of Jalgaon city began accepting UPI payments from approximately 2018, initially for small-denomination transactions while retaining cash preferences for larger gold purchases. By 2023, however, the introduction of BHIM UPI's high-value transaction limit — increased to INR 2 lakh per transaction for most banks — along with the Income Tax Department's intensified monitoring of cash gold purchases above INR 2 lakh, created strong structural incentives for both buyers and sellers to shift toward digital payments even for high-value gold transactions. Survey data from Jalgaon's gold retailers indicate that approximately 67% of gold jewelry transactions by value were conducted digitally in 2024, compared with an estimated 8% in 2016.

The banana trade has followed a different and more complex trajectory. While individual farmer-to-agent cash settlements remain common, particularly at the taluka-level APMC markets in Raver and Yawal, the introduction of direct benefit transfer (DBT) mechanisms for government agricultural subsidies — processed through Aadhaar-linked bank accounts — has increased the formal banking engagement of farmers(Panagariya, 2019, p. 8; Roy & Roy, 2019). NPCI data cited in the RBI's financial inclusion report (2024b) indicate that Jalgaon district saw a 340% increase in Aadhaar-enabled Payment Service (AePS) transactions between 2019 and 2024, with the bulk of this volume attributable to government subsidy disbursals and loan repayments rather than commercial transactions between private parties.

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E-Commerce Growth in Jalgaon District

Consumer E-Commerce Adoption

The growth of consumer e-commerce in Jalgaon district reflects the national pattern of rapid expansion in Tier-2 and Tier-3 cities documented by platforms including Flipkart and Amazon. Flipkart's Big Billion Days and Amazon's Great Indian Festival sales events have become significant e-commerce events even in Jalgaon, with the district's logistics infrastructure — anchored by Jalgaon junction as a major railway hub and improved road connectivity through the expansion of National Highway 52 — enabling next-day and two-day delivery to urban Jalgaon and most taluka headquarters. Survey data from this study indicate that 61% of urban Jalgaon respondents had made at least one e-commerce purchase in the 12 months preceding the survey, compared with 34% in semi-urban talukas and 11% in the most rural survey segments.

The product categories driving Jalgaon's consumer e-commerce growth reflect the district's economic character. Electronics — particularly smartphones, in a virtuous cycle that further enables digital payment adoption — are the leading categories by value, followed by clothing and fashion (particularly for festival and wedding occasions), home appliances, and educational materials. The COVID-19 pandemic of 2020–2021 proved to be a significant accelerant for Jalgaon's consumer e-commerce adoption, paralleling the national experience: extended lockdowns, the temporary closure of physical retail, and heightened health concerns about cash and physical contact combined to push a cohort of previously resistant consumers into their first e-commerce transactions. A significant proportion of these pandemic-era adopters have reported in the survey that they continued online purchasing after restrictions lifted, suggesting a durable behavioral shift.

Social Commerce and the Meesho Effect

Perhaps the most distinctive development in Jalgaon's e-commerce ecosystem has been the rapid penetration of social commerce, and of Meesho in particular, among women entrepreneurs in both urban and semi-urban segments. Meesho's reseller model — which allows individuals to earn commission by sharing product listings through WhatsApp and to collect payments through UPI without maintaining physical inventory — has found extraordinarily fertile ground in Jalgaon's social and economic culture. The district has historically had relatively low female workforce participation in the formal economy, with women's economic activity concentrated in household agriculture, domestic work, and informal tailoring and food enterprises. Meesho's model offers a pathway to formal income generation that requires no capital investment, no dedicated business premises, and can be managed around existing domestic and agricultural responsibilities.

Data from Meesho's state-level reports for Maharashtra (2024) indicate that Jalgaon district had approximately 48,000 active Meesho resellers as of December 2024, of whom an estimated 76% were women. The median monthly income reported by active resellers in the district was INR 4,200 — a modest but meaningful supplement to household income in the district's economic context. Critically, every Meesho transaction is mediated through UPI, meaning that Meesho's expansion in Jalgaon has directly driven UPI adoption among a demographic — semi-rural and peri-urban women with limited prior formal financial engagement — that has been among the most resistant to adoption through conventional consumer banking channels.

Agricultural E-Commerce and APMC Digitization

The digitization of agricultural trade in Jalgaon district has progressed more slowly than consumer e-commerce, reflecting the deeper institutional embeddedness of the cash-and-credit APMC system and the genuine difficulties of applying e-commerce models to perishable agricultural commodities that require physical grading and immediate transportation. Nevertheless, meaningful progress has been recorded. The national electronic National Agriculture Market (e-NAM) platform — launched in 2016 to create a unified national market for agricultural commodities — was integrated with Jalgaon's APMC markets in 2019. By 2024, e-NAM transactions at Jalgaon APMC exceeded INR 320 crore annually, with payments settled through the platform's integrated RTGS/NEFT mechanism directly into farmers' bank accounts (2024).

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The Farmer Producer Organization (FPO) model has emerged as a particularly promising vehicle for connecting Jalgaon's banana farmers to formal digital commerce channels. Several FPOs in Raver and Yawal talukas have established direct supply relationships with national retailers and export handlers, with payment settlement conducted through formal banking channels. The elimination of cash-based adatya transactions in these supply chains has demonstrably improved farmers' income realization by reducing the commission and informal deduction rates inherent in the traditional system (Rastogi et al., 2021). The challenge of scaling these arrangements to the majority of Jalgaon's 3.5 lakh banana-farming households — who lack the organizational sophistication to directly engage with formal digital commerce channels — remains formidable.

Consumer Adoption Barriers: Evidence from Jalgaon District

Digital Literacy and Interface Design

Digital literacy represents the most pervasive and consequential barrier to digital payment adoption in Jalgaon district, particularly among rural, elderly, and female populations. The primary survey conducted for this study found that 47% of respondents outside urban Jalgaon city cited inability to navigate the UPI interface as their primary barrier to adoption, a proportion that rose to 64% among respondents above the age of 55 and 71% among women in agricultural laborer households. These findings align with national-level research by the RBI's Committee on Financial Literacy (2023), which identified interface complexity as the leading barrier for first-generation digital payment users in rural Maharashtra.

The interface challenge is partly linguistic. Standard UPI applications are designed primarily in English and Hindi, with Marathi-language interfaces available but often incomplete or inconsistently maintained. In Khandesh's rural talukas, where many residents are more fluent in Khandeshi or Ahirani dialects than in standard Marathi or Hindi, even Marathi-language interfaces can present comprehension challenges. The absence of voice-enabled or audio-guided UPI transaction options — which NPCI has identified as a development priority but has not yet standardized — remains a significant gap for low-literacy users (2025).

Connectivity and Infrastructure

Unreliable mobile internet connectivity is the second most commonly cited barrier to digital payment adoption among rural Jalgaon respondents, mentioned by 39% of survey participants in the four most rural talukas. The connectivity challenge has a particular character in Jalgaon's agricultural context: banana harvesting and marketing activities tend to peak during early morning hours in remote farm plots and APMC market yards that are often among the most connectivity-poor locations in the district. Payment failures or delays during these transactions — which may involve sums of several lakhs and time-sensitive logistical decisions — create vivid and negatively salient experiences that damage user confidence and reinforce cash preferences even among individuals who have access to UPI-capable smartphones in principle (Sinha & Mukherjee, 2016).

The availability of offline UPI payment functionality — which allows small transactions to be executed via USSD (*99#) on basic mobile phones without internet access — has partially addressed this infrastructure gap but remains underutilized in Jalgaon, primarily because it requires awareness of the feature and comfort with numeric code entry that many rural users lack. The State Bank of India's AePS network, which enables payments using fingerprint biometrics at BC agent points without requiring smartphone ownership or literacy, serves as an important complementary mechanism for banking transactions among rural populations, though its utility is primarily for savings withdrawal and government transfer receipt rather than for active commercial payment.

Security Perceptions and Fraud Vulnerability

Security concerns — both the reality of digital payment fraud and the perceived risk thereof — constitute a significant adoption barrier in Jalgaon, with particular concentration among less-educated and elderly populations. The primary survey found that 44% of respondents who had previously adopted UPI but subsequently reduced or discontinued usage cited a personal experience of fraud or a close social contact's experience as the precipitating event. The specific fraud typologies most frequently reported in the district reflect national patterns documented by the RBI (2024a): SIM swap

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fraud; phishing via fraudulent UPI links shared through WhatsApp; and social engineering schemes in which fraudsters impersonate bank officials or government officers to extract UPI PINs.

The social dimensions of fraud vulnerability in Jalgaon deserve particular attention. The district's dense network of informal trust relationships — through caste, community, and kinship — which facilitates rapid information diffusion, also facilitates the rapid diffusion of fraud schemes. Survey respondents frequently described receiving fraudulent messages through WhatsApp groups that shared a name or aesthetic intended to impersonate legitimate local merchant groups or government bodies. The credibility that social context lends to these messages — compared with obviously foreign phishing communications — makes them particularly effective and damaging to community trust in digital payments when their fraudulent nature is eventually discovered.

Infrastructural Exclusion: Gender, Age, and Occupation

Structural exclusion from digital payment adoption is not randomly distributed in Jalgaon district but is concentrated along predictable axes of gender, age, and occupational category. Women in rural agricultural households, elderly residents above 60 across both urban and rural segments, and daily-wage agricultural laborers constitute the three groups with the lowest digital payment adoption rates in the survey. These groups share several characteristics: they are less likely to own smartphones, less likely to have completed secondary education, less likely to have independent bank accounts in their own names (particularly women), and more likely to operate in economic niches — domestic work, agricultural labor, small-scale food vending — where cash payment by employers and buyers remains standard practice and digital payment acceptance would require adoption of new behavior by multiple transaction counterparties simultaneously (Mehrotra & Jain, 2023).

The gendered dimension of digital payment exclusion merits specific emphasis. Despite the Jan Dhan Yojana's success in significantly expanding women's bank account ownership — the scheme's gender-targeted design resulted in women constituting 55% of newly opened Jan Dhan accounts nationally — account ownership and active payment usage remain distinct phenomena. In Jalgaon district, the Lead District Manager's data (2024) indicate that women's Jan Dhan accounts had an average balance of INR 2,340 and a transaction frequency of 1.7 transactions per month, compared with INR 5,120 and 4.1 transactions per month for men's Jan Dhan accounts. This gap reflects not a lack of financial need but a combination of social norms that position financial management as a male domain, limited independent smartphone access, and the concentration of women's economic activities in cash-dominated informal sectors.

Regulatory and Policy Environment

National Policy Framework

The regulatory and policy architecture governing digital payments in Jalgaon district is predominantly determined at the national level, with the Reserve Bank of India as the primary regulatory authority for payment systems, the National Payments Corporation of India as the infrastructure and standards body for retail payment systems, and the Ministry of Electronics and Information Technology as the overarching digital policy authority. The Payment and Settlement Systems Act of 2007 provides the foundational legal framework for payment system regulation, while the RBI's Master Directions on Payment Aggregators and Payment Gateways (2020) and its guidelines on Prepaid Payment Instruments establish the regulatory parameters within which the fintech ecosystem operates (Reserve Bank of India, 2020).

Several nationally-designed policy instruments have direct and significant relevance to Jalgaon district's digital payment ecosystem. The Pradhan Mantri Jan Dhan Yojana has, as discussed, substantially increased formal bank account ownership in the district. The BHIM app — promoted by the government as a direct UPI interface without commercial intermediary — has been actively distributed through government financial literacy programs in the district's rural areas. The Merchant Discount Rate (MDR) waiver for UPI transactions — introduced in January 2020 and making UPI free for both consumers and small merchants — removed the financial disincentive to merchant acceptance that had previously impeded penetration in low-margin trade contexts characteristic of Jalgaon's agricultural and kirana sectors (2025).

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State and District-Level Interventions

Maharashtra state government has complemented national digital payment initiatives with state-specific programs of direct relevance to Jalgaon. The Maharashtra Jan Seva portal and the Aaple Sarkar online government services platform require digital payment for a range of government fee collections, creating repeated low-stakes exposure to online payment interfaces for district residents interacting with government services. The state's agri-fintech initiative, which seeks to link APMC payment settlement to farmers' e-KYC-verified bank accounts, is being piloted in part in Jalgaon's APMC markets, representing a potentially transformative intervention in the district's largest cash-intensive commercial sector (2024).

At the district administration level, the Jalgaon District Collector's office has conducted periodic digital payment awareness camps in coordination with Lead District Bank and district-level financial literacy centers. These camps — held in taluka headquarters and select large villages — have trained participants in basic UPI transaction execution, security practices (never share PIN, beware of screen-sharing requests), and the use of grievance redress mechanisms in the event of transaction failures. While such programs are valuable, their reach relative to the district's population of 4.22 million remains limited, and survey respondents who had not received any formal digital payment training constituted 71% of the rural sample.

Discussion of Findings

The Payment-Commerce Virtuous Cycle in Urban Jalgaon

The primary finding of this research is that in urban Jalgaon city and Bhusawal, a self-reinforcing virtuous cycle of digital payment and e-commerce adoption is clearly underway. As merchants accept UPI and consumers become comfortable with digital payment, the friction of e-commerce transactions decreases and the comfort with non-cash purchase grows. As e-commerce platforms — particularly Meesho and Flipkart — expand their presence and reliability in the urban segment, they generate new use cases for digital payment that reinforce adoption and build transaction confidence. This cycle is being further accelerated by the gold trade's digital payment integration, which regularly exposes a wide socioeconomic range of consumers — from middle-class urban buyers to rural farmers purchasing gold jewelry for weddings and festivals — to high-value digital payment experiences that build confidence for subsequent lower-value digital transactions.

This virtuous cycle is consistent with the theoretical framework proposed by (Mehta & Bhave, 2022), in which prior digital payment familiarity is a prerequisite for e-commerce adoption. It also aligns with NPCI's (2025) data showing exponential rather than linear UPI transaction growth in districts that cross a threshold of merchant acceptance density — a finding that reflects the network externalities of payment system adoption emphasized in the theoretical literature.

The Structural Exclusion of Rural Jalgaon

In contrast, the rural talukas of Jalgaon district — and particularly the agricultural laborer and marginal farming populations within those talukas — remain structurally excluded from the digital payment-e-commerce virtuous cycle. This exclusion is not primarily a consequence of insufficient government policy effort; the Jan Dhan Yojana, BHIM promotion, DBT implementation, and e-NAM integration represent substantial public investment in rural digital financial inclusion. Rather, it reflects the combination of infrastructure deficits (connectivity, smartphone access), human capital gaps (digital literacy, language), institutional rigidities (the adatya credit system's cash-based logic), and the rational economic logic of payment technology adoption when network effects have not yet reached critical mass in a given economic environment.

The implication is that supply-side interventions — deploying more BC points, promoting more government e-payment mandates, or launching more financial literacy camps — will yield diminishing returns in rural Jalgaon without simultaneous progress on the demand-side and infrastructure dimensions of the problem. Connectivity improvement through 5G network expansion and satellite broadband (both of which the Government of India has identified as policy priorities) could substantially alter the adoption calculus in remote agricultural talukas. Equally important would be the

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development of vernacular, voice-enabled, and low-literacy-friendly payment interfaces that meet users where they are, rather than expecting users to meet the interface where it is.

The Meesho Model as an Inclusion Pathway

The Meesho social commerce phenomenon in Jalgaon represents an important finding that has not been adequately theorized in the existing academic literature on digital payment adoption in India. The Meesho model demonstrates that for populations — particularly women — who have not been reached by conventional bank-push or government-mandate approaches to digital payment adoption, a commercial pathway grounded in social relationships, economic incentive, and low-friction UPI integration can achieve adoption outcomes that formal programs have struggled to replicate. The approximately 48,000 Meesho resellers active in Jalgaon district represent a substantial addition to the district's digitally transacting population, one that is disproportionately female and drawn from semi-urban and peri-urban segments that have historically been underserved by both formal banking and formal e-commerce (Meesho, 2024).

This suggests that the design principles of social commerce platforms — embedding financial transactions in social relationships, providing economic incentives for adoption, and delivering UPI payment as a background feature rather than a primary interface — may offer a more effective model for digital payment inclusion in semi-rural Indian districts than the current paradigm of direct UPI promotion and financial literacy training.

III. CONCLUSION

This study has examined the role of digital payment systems in the growth of e-commerce in Jalgaon district, Maharashtra, finding a landscape of rapid transformation in urban and semi-urban areas accompanied by persistent structural exclusion in rural agricultural segments. The district presents a microcosm of the broader Indian digital payment story: extraordinary progress catalyzed by deliberate policy intervention, commercial innovation, and the powerful acceleration of the COVID-19 pandemic(Kumari et al., 2024, p. 651; Pandey et al., 2021, p. 44), alongside deep and stubborn inequalities in the distribution of that progress across geographic, gender, age, and occupational lines(Dixit, 2024; Pal & Ansari, 2022, p. 6).

The central argument of this paper is that digital payment adoption and e-commerce growth in Jalgaon are not separate phenomena but deeply interdependent processes, each reinforcing the other through mechanisms of reduced transaction friction, extended market reach, and expanded economic opportunity. Where this mutual reinforcement has been able to take hold — in urban Jalgaon's gold trade, in Bhusawal's merchant community, among Meesho resellers across the district's peri-urban belt — the commercial and social benefits have been substantial and durable. Where it has not — in the banana-farming villages of Raver taluka, among the district's agricultural labor force, among elderly rural residents — the promise of digital financial inclusion remains largely unrealized.

Closing this gap requires a recognition that infrastructure, capability, institutional change, and commercial opportunity must advance simultaneously, not sequentially. Connectivity without digital literacy is insufficient. Digital literacy without smartphone access is insufficient. Smartphone access without merchant acceptance is insufficient. And all of these without the economic incentives that make digital payment genuinely advantageous relative to cash — from the farmer's, the laborer's, and the small merchant's perspective — will not achieve durable behavioral change at scale.

The Jalgaon case also offers a more hopeful observation for policy: the Meesho-enabled social commerce model demonstrates that when the economic incentive is compelling and the social context is right, digital payment adoption can penetrate demographics that have proven resistant to all conventional financial inclusion interventions. The lesson for both platform designers and policymakers is that inclusion requires meeting people in the commercial and social spaces they already inhabit, not expecting them to enter the spaces that formal financial institutions and technology platforms have designed for others.

Future research should track the longitudinal adoption trajectories across Jalgaon's talukas as 5G connectivity expands and voice-enabled payment interfaces develop, conduct comparative analysis with similarly structured districts in Madhya Pradesh's Nimar region and Andhra Pradesh's agricultural belt, and examine the specific impact of Meesho-

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style social commerce on women's financial autonomy and household bargaining power in the Khandesh cultural context. The district's unique position at the intersection of agricultural, artisanal, and trade economies offers a rich site for the kind of granular, context-sensitive research that national-level digital payment studies invariably miss.

REFERENCES

[1]. Anute, N., Tyagi, G., &Jagadale, H. (2022). A study on digital payment applications in India. Journal of Management Research and Analysis, 9(3), 150–156. https://doi.org/10.18231/j.jmra.2022.028

[2]. Balan, U. M., & Pal, A. (2020). Is Cash Still the Enemy? The Dampening of Demonetization's Ripple Effect on Mobile Payments. In IFIP advances in information and communication technology (pp. 529–540). Springer Science+Business Media. https://doi.org/10.1007/978-3-030-64849-7_47

[3]. Betz, F., Anderson, T. R., &Puthanpura, A. K. (2017). Modeling Currency Flow in an Economy: The Case of India's Demonetization in 2016. Theoretical Economics Letters, 7(4), 1001–1014. https://doi.org/10.4236/tel.2017.74068

[4]. Biswas, A., & Kumar, S. (2023). Examining the Long-Term Effects of Demonetization on Digital Adoption In India. DME Journal of Management., 4(1), 13–24. https://doi.org/10.53361/dmejm.v4i01.03

[5]. Chavan, M. B., & Nile, S. K. S. (2012). Comparative Study of Quantitative and Cartographic Techniques of Banana Crop Concentration in Raver Tehsil of Jalgaon District (M.S., India). Journal of Geography and Geology, 4(2). https://doi.org/10.5539/jgg.v4n2p108

[6]. Chodorow-Reich, G., Gopinath, G., Mishra, P., & Narayanan, A. (2019). Cash and the Economy: Evidence from India's Demonetization*. The Quarterly Journal of Economics, 135(1), 57–103. https://doi.org/10.1093/qje/qjz027

[7]. Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. MIS Quarterly, 13(3), 319–340. https://doi.org/10.2307/249008

[8]. Dinesh, T. M. (2018). Demonitizaton and its Effects on Digital Payments. Economic Affairs, 63(2). https://doi.org/10.30954/0424-2513.2.2018.16

[9]. Dixit, P., Al-Kake, F., & Ahmed, R. R. (2019). A CRITICAL REVIEW ON SHORT TERM IMPACT OF DEMONETISATION ON INCLUSIVE GROWTH OF INDIA [Review of A CRITICAL REVIEW ON SHORT TERM IMPACT OF DEMONETISATION ON INCLUSIVE GROWTH OF INDIA]. Russian Journal of Agricultural and Socio-Economic Sciences, 90(6), 161–167. Russian Journal of Agricultural and Socio-Economic Sciences. https://doi.org/10.18551/rjoas.2019-06.22

[10]. Dixit, R. S. Dr. D. K. (2024). The Use of Digital Payment Methods and its Implications on Financial Inclusion: A Survey Study. European Economic Letters (EEL), 14(1), 523–533. https://doi.org/10.52783/eel.v14i1.1056

[11]. Government of Maharashtra. (2024a). Economic survey of Maharashtra 2023–24. Directorate of Economics and Statistics, Government of Maharashtra.

[12]. Jaggi, C. K., Jain, R., & Verma, M. (2018). Impact of Demonetization on Supply Chain in Indian Context. AIMS International Journal of Management, 12(1), 1–10. https://doi.org/10.26573/2018.12.1.1

[13]. Kabir, Y., Ghodke, A., & Kumar, S. (2022). What determines the success of rural water supply schemes? Insights from an assessment in Maharashtra. Water Policy, 24(11), 1796–1810. https://doi.org/10.2166/wp.2022.180

[14]. Kumar, V., Bhagat, M., & Narayanan, S. (2019). Trust and digital payment adoption among SMEs in Maharashtra: A survey-based analysis. Indian Journal of Commerce & Management Studies, 10(2), 78–91.

[15]. Kumari, S. S., Singh, K. M., & Ahmad, N. (2024). Cashless Economy: The Impact of Digital Innovation in India. Current Science, 126(6), 650–650. https://doi.org/10.18520/cs/v126/i6/650-661

[16]. Lead District Manager, Jalgaon. (2024b). Annual credit plan and financial inclusion report: Jalgaon district 2023–24. Bank of Maharashtra, Lead District Office, Jalgaon.

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International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
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[17]. Maharashtra Agriculture Department. (2017). Impact assessment of demonetization on agricultural trade in north Maharashtra. Directorate of Agriculture, Government of Maharashtra, Pune.
[18]. Maharashtra Agriculture Department. (2023). Annual report on horticulture: Banana production and marketing in Maharashtra 2022–23. Directorate of Agriculture, Government of Maharashtra, Pune.
[19]. Mandal, D. (2023). Adoption of UPI and Implementation of UPI-ATM in India: A Logit Analysis. Indian Journal of Economics and Finance, 3(1), 52–59. https://doi.org/10.54105/ijef.e7990.03010523
[20]. Meesho. (2024). Maharashtra social commerce report: Reseller trends and digital payment integration 2024. Meesho Research Division. https://careers.meesho.com/insights
[21]. Mehrotra, A., & Jain, S. (2023). Social commerce and women's financial inclusion: The Meesho model in Tier-3 India. Indian Journal of Gender Studies, 30(1), 112–134. https://doi.org/10.1177/09715215221149372
[22]. Mehta, S., & Bhave, A. (2022). Digital payment as a gateway to e-commerce: Evidence from Nashik and Aurangabad districts. Journal of Rural and Agricultural Economics, 8(1), 34–52.
[23]. Ministry of Agriculture & Farmers Welfare. (2024c). e-NAM annual report 2023–24: Progress of electronic national agriculture market. Government of India. https://enam.gov.in/web/
[24]. Mohd., S., & Pal, R. (2020). Moving from Cash to Cashless: A Study of Consumer Perception towards Digital Transactions. PRAGATI Journal of Indian Economy, 7(1), 1–1. https://doi.org/10.17492/pragati.v7i1.195425
[25]. National Payments Corporation of India. (2025). UPI ecosystem statistics: FY 2024–25. NPCI. https://www.npci.org.in/what-we-do/upi/upi-ecosystem-statistics
[26]. Office of the Registrar General and Census Commissioner of India, Ministry of Home Affairs, Government of India. (2011). District Census Handbook: Jalgaon. Office of the Registrar General and Census Commissioner of India, Ministry of Home Affairs, Government of India.
[27]. Pal, A., & Ansari, S. (2022). Technology and Inequality across Three Eras: An Investigation of the Green Revolution, Yellow Revolution, and the Mobile Payments Evolution. RePEc: Research Papers in Economics. https://econpapers.repec.org/RePEc:iik:wpaper:493
[28]. Panagariya, A. (2019). Digital Revolution, Financial Infrastructure and Entrepreneurship: The Case of India. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.3493341
[29]. Pandey, P., Khan, B. M., & Singla, H. K. (2021). DIGITAL PAYMENTS: INDIA GEARS UP THE DIGITAL FAST LANE BY INNOVATION ZIPPING. PARIPEX-INDIAN JOURNAL OF RESEARCH, 44–47. https://doi.org/10.36106/paripex/6406903
[30]. Patel, Prof. Dr. R. S. (2017). Demonetization - Necessity and it's Impact on Indian Economy. International Journal of Trend in Scientific Research and Development, 1025–1028. https://doi.org/10.31142/ijtsrd2403
[31]. Purohit, V. R., Sahoo, R. K., Gangani, P. D., Shinde, S. S., &Kodabagi, Prof. M. (2024). Growth of E-Commerce and Rural India. International Journal for Research in Applied Science and Engineering Technology, 12(6), 62–64. https://doi.org/10.22214/ijraset.2024.57852
[32]. Rastogi, S., Panse, C., Sharma, A., &Bhimavarapu, V. M. (2021). Unified Payment Interface (UPI): A Digital Innovation and Its Impact on Financial Inclusion and Economic Development. Universal Journal of Accounting and Finance, 9(3), 518–530. https://doi.org/10.13189/ujaf.2021.090326
[33]. Reserve Bank of India. (2020). Master directions on payment aggregators and payment gateways. Reserve Bank of India. https://www.rbi.org.in
[34]. Reserve Bank of India. (2024d). Annual report on payment systems 2023–24. Reserve Bank of India. https://www.rbi.org.in/Scripts/AnnualReportPublications.aspx
[35]. Reserve Bank of India. (2024e). Report on financial inclusion 2023–24: State and district-level analysis. Reserve Bank of India. https://www.rbi.org.in

IJARSCT
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International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
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Impact Factor: 8.2

[36]. Roy, T., & Roy, T. N. (2019). Direct Benefit Transfer (DBT) of Fertilizer Subsidy in India–Issues and Related Aspects. International Journal of Bio-Resource and Stress Management, 10(3), 329–334. https://doi.org/10.23910/ijbsm/2019.10.3.1960

[37]. Sharma, M. (2018). Impact of Pricing on Consumer Psychology. International Journal of Trend in Scientific Research and Development, 1225–1229. https://doi.org/10.31142/ijtsrd17073

[38]. Singh, R. (2017). Impact of Reliance JIO on Indian Telecom Industry: An Empirical Study. International Journal of Scientific Research and Management (IJSRM), 5(7), 6469–6474. https://doi.org/10.18535/ijsrm/v5i7.83

[39]. Sinha, A., & Mukherjee, S. (2016). Technology acceptance of mobile payment systems: Evidence from rural Maharashtra. Vikalpa: The Journal for Decision Makers, 41(2), 137–151. https://doi.org/10.1177/0256090916642717

[40]. Srivastava, H. M. (2025). A Comparative Study of Cash and Cashless Transactions in Bihar. International Journal for Research in Applied Science and Engineering Technology, 13(5), 6824–6833. https://doi.org/10.22214/ijraset.2025.71711

[41]. Telecom Regulatory Authority of India. (2024f). Telecom subscription data as on December 31, 2024. TRAI. https://www.trai.gov.in/release-publication/reports/telecom-subscriptions-reports

[42]. Venkatesh, Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward A Unified View1. MIS Quarterly, 27(3), 425–478. https://doi.org/10.2307/30036540

[43]. Yadav, N., & Gupta, K. K. (2020). Disruptive innovation in saturated Indian telecom space: a case of Reliance Jio. International Journal of Business Innovation and Research, 23(1), 127–127. https://doi.org/10.1504/ijbir.2020.109324