



DIGITAL PAYMENT ADOPTION AMONG INDIAN CONSUMERS: AN EMPIRICAL ANALYSIS OF PERCEPTIONS, DETERMINANTS, AND SOCIOECONOMIC IMPACT

Amit Kumar Goel¹

¹ Research Scholar, Department of Business Management, Integral Business School, Integral University, Lucknow, India.

Dr. Yasir Arafat Elahi²

² Associate Professor, Department of Business Management, Integral Business School, Integral University, Lucknow, India.

Abstract

Within a span of a decade, the Indian payments system has undergone transformation from a cash-dominated one to one that is characterized by UPI and other forms of mobile wallets, cards, and biometric payment options. Although the overall numbers of transactions conducted using digital payment systems have been tracked by the Reserve Bank of India and the National Payments Corporation of India, they do not shed light on the perception that consumers have towards these changes, what influences the consumers to use these payment systems and how does their willingness to pay digitally reflect in different sectors like retail and healthcare and whether the benefits of digital payments systems are enjoyed by all consumers equally. This research paper attempts to bridge the identified gap by deploying a structured survey questionnaire consisting of thirty-two items categorised under ten constructs, and administered among the users of digital payments platforms. Through the employment of reliability analysis, descriptive statistics, frequency, one-sample t-tests, multiple regression, and Pearson correlation, this study tests a total of eighteen hypotheses relating to adoption of technology, antecedents to adoption (Ease of Use, Convenience, Security, and Trust), sectoral impact in Retail/FMCG industry and Healthcare Industry, Financial Inclusion, Barriers to adoption, and Cash Displacement. All of the eighteenth hypotheses tested show statistical significance. However, two of the hypotheses require further discussion as they are subject to certain qualifications; perceived security, despite its positive perception rating, is not a predictor of adoption of technology once all other antecedents are controlled, and barriers to adoption show a positive correlation with the use of the technology as opposed to a negative one.

Keywords: digital payments, UPI, technology adoption, financial inclusion, India, consumer behaviour, cashless economy



1. Introduction

The payment system can be said to serve as the glue that binds an economy together because it is the system by which value flows between different people, businesses and organizations, and the entire foundation upon which all other economic transactions take place. Up until recently, the typical portrayal of India since its independence has always been that of a mainly cash economy due to the nature of the informal economic setup in India, the lack of penetration of formal banking systems in rural and semi-urban areas and the ease with which cash works in such a system which involves low levels of trust and connectivity without any technological precondition (Khando et al., 2022). This has, however, started changing in the last few decades. The establishment of the regulatory body of the Reserve Bank of India and nationalization of major commercial banks and series of technological developments such as the EDC clearing services in the late nineties, RTGS and NEFT in the mid-two thousands, and the formation of National Payments Corporation of India in 2008 have laid the foundation for the present day digital payment systems (Purushotham, 2023; Jakhiya et al., 2020). Most importantly, one can consider the initiation of the Unified Payments Interface (UPI), which was launched in 2016, to be the most important development along this path. By providing an opportunity for real-time and seamless transactions between banks via a single virtual ID without requiring one's financial data and almost for free for the final user, the UPI addressed a lot of issues in fragmentation of mobile wallet systems (Kumar et al., 2025; Rai, 2025). Further development of UPI was facilitated by two major external factors – the demonetization of large-denomination currency notes in November 2016, when users were forced temporarily into using digital instruments, and the outbreak of the coronavirus disease (COVID-19), which added concerns about physical safety due to health reasons to the existing needs in contactless payments (Irfan et al., 2024; Arif et al., 2026). In modern-day India, there is a multi-layered digital payments system, consisting of UPI, RuPay and other card networks, mobile wallets, the Aadhaar Enabled Payment System (AEPS), using biometrics in poorly developed areas, as well as traditional internet and mobile banking, aimed at supporting the highly heterogeneous population of the country (Azeez N. P. et al., 2022; Singh & Kansal, 2025).

The scope of this phenomenon has been clearly demonstrated at the national level using RBI and NPCI data, and there is also an expanding body of literature focused on analyzing why and how digital payment instruments have been adopted by consumers in India. However, the aspect that is relatively underdeveloped at the moment concerns the perceptual mechanisms behind the process of adoption of digital payments among individual consumers, i.e., how much certain beliefs regarding ease of use, convenience, security, and trust do predict actual transactions through digital channels and are not just associated with positive attitudes towards the concept of such transactions and what the impact of this adoption process can be on different contexts of spending such as purchasing goods and paying for healthcare services (Patra & Sethi, 2023; Saroy et al., 2023). The transaction volume numbers, even though they are impressive, do not provide any insights into



perceptions or into sectoral usage and whether adoption process contributes to further financial engagement of people who were already connected to the formal financial system or makes new customers out of those who were not connected before.

This study seeks to address this knowledge gap. This is achieved by using an instrument that was quantitatively structured, and it was used to assess some digital payment users with the aim of investigating through statistically sound methods the perceptual antecedents that would independently predict adoption; the way adoption manifests itself in terms of consumers' behavioral change in the retail/FMCG and healthcare sectors; the importance of digital payment use in financial inclusion; the most relevant barriers experienced by users; and how much digital payments have replaced physical cash.

1.2 Objectives of the Study

1. To assess the degree to which digital payment instruments have been adopted as a routine mode of transacting among the surveyed consumers.
2. To identify the perceptual antecedents — ease of use, convenience, security, and trust — that shape adoption, and to determine which of these independently predict adoption behaviour once considered jointly.
3. To evaluate the perceived impact of digital payment usage on consumer behaviour within the retail and FMCG sector, specifically transaction speed, store preference, and impulse purchasing.
4. To evaluate the perceived impact of digital payment usage on efficiency, transparency, and frequency of use within the healthcare sector.

The findings bear on three distinct audiences. For payment service providers and fintech firms, an empirically grounded ranking of which perceptual factors actually move adoption — as opposed to which factors are merely rated favourably — offers a more efficient basis for product and onboarding investment than attitudinal survey data alone. For merchants and institutions in the retail and healthcare sectors, the sector-specific findings clarify where digital payment adoption changes commercial and operational reality (such as store selection) and where it does not (such as the transparency of what is billed, as distinct from what is paid). For policymakers, the study offers a more disciplined reading of financial inclusion claims than aggregate adoption statistics typically permit, distinguishing between the deepening of engagement among consumers already inside the formal financial system and the harder, less well-evidenced claim of extending access to those historically excluded from it.



2. Literature Review

2.1 Conceptual Understanding of Digital Payments

A digital payment, therefore, may be understood as a value transfer among the involved parties through electronic means without the physical use of currency notes and coins and involves payment modes including bank transfers, card transactions, mobile transactions and biometric payments (Khando et al., 2022). There are several structural differences between digital payments and cash; they include having an electronic footprint for tracking, being quicker compared to cash, having lower transaction costs when the infrastructure required to conduct transactions is already in place despite its higher setup costs, and involving electricity, connectivity, and institutional requirements not involved in cash transactions (Teket et al., 2022; Dr M. Reddi Naik & Dr Kanderi Sridevi, 2024). Literature also makes a clear distinction between the two concepts of adoption and usage in regard to payment systems; while the former is about making a choice to adopt a payment system, the latter entails usage frequency and intensity of the payment mode in question; a distinction that is critical because a person who has downloaded a digital payment application but uses it infrequently still poses a significantly different scenario from someone who has stopped cash transactions (de Luna et al., 2019; Anbukarasi & P.J, 2024).

Any discussion on the concept of “cashless economy” in relation to the Indian economy tends to be limited to being a long-term direction toward a “less cash” economy rather than an empirical one in the immediate future due to the continued importance of cash in the informal sector (Roy, 2015; Srouji, 2020). The common advantages associated with such a move towards a less cash economy include lower cost involved in printing, storage and security of the cash, increased convenience for monetary and tax administration because of the traceability of the digital money, and the lower circulation of fake notes (Yi-Xun Pang et al., 2022; Chauhan & Sharma, 2024). On the other hand, the literature is aware of some valid concerns about the disadvantages of moving away from cash as well.

2.2 Evolution of Digital Payments in India

The move toward digital payments in India has happened in definite stages. After early use of automation using magnetic ink character recognition in the processing of cheques in the 1980s, the Electronic Clearing Service was introduced in the 1990s and 2000s to facilitate bulk payments such as salary and dividend transactions (Purohit, 2021; Sheerin, 2019). RTGS, which came into effect in 2004, and NEFT, which started working in 2005, represented the first systems of truly electronic transfers that could be used for both large-value and retail transactions (A. & S., 2022), whereas the formation of NPCI in 2008 ensured that there was an institution to oversee interoperability, cost-effectiveness, and scale in retail payments and which would then develop IMPS, RuPay, AEPS, and UPI (Agrawal et al., 2018; Madan & Sharma, 2024).



The 2016 introduction of UPI is considered a key milestone by the literature, because of the interoperability it offers among banks and third-party applications, the use of virtual payment addresses rather than revealing the account details, 24x7 real-time settlement, and almost no cost to the consumer (Leelavathi & Chandramohan, 2026; Rai, 2025). The open-API nature of this platform, on the other hand, has facilitated a competitive market of third-party applications developed by banks and fintechs as well, an approach which has been mentioned many times in the literature on comparative studies and policy-making as the good governance of publicly owned digital infrastructure (A. Rai, 2026; Khatwani et al., 2023). This progress has been accompanied by the development of mobile and online banking as a result of the growing penetration rates of smartphones and the reduction in the cost of the data, due to increasing competition in the telecommunication industry (Agrawal et al., 2018), and also by the behavioral shocks of demonetization and COVID-19, both of which brought about within just a few months the adoption process which would have taken place in a number of years (Balakrishnan, 2023; Putrevu & Mertzanis, 2023).

2.3 Theoretical Perspectives on Adoption

There are several theories which keep coming up in the research related to digital payments adoption. According to Technology Acceptance Model (TAM), adoption intentions are formed mainly due to perceived usefulness and perceived ease of use (Krishna Mula, 2025; Agarwal et al., 2024). Research on TAM and its applications to digital payments adoption in India has always found these two aspects of interest, although there is growing understanding now that other aspects such as trust, perceived security, and perceived risk need to be incorporated into the basic TAM framework to understand the importance of money transaction aspect in particular as opposed to technology adoption in general (Fakriah et al., 2025; Latifah & Daniel Tumpal Hamonangan Aruan, 2025). UTAUT theory includes social influences and facilitating conditions as well, and both are highly relevant in the Indian context owing to the nature of society and infrastructure in the country (Zehra et al., 2024; G. Chauhan, 2026).

The Diffusion of Innovation theory, attributed to Everett Rogers, is used to understand the S-shaped pattern of adoption seen in the use of digital payments and focuses on the influence of the observability factor – the visibility of the use of peers and merchants – as an incentive for the later adoption of the technology by non-users (Akshita Mishra & Dr. Ram Asrey, 2026; Alok et al., 2024). The Theory of Planned Behaviour introduces the factor of perceived behavioral control which proves especially crucial for older, less tech-savvy users where the confidence in one's ability to perform transactions without assistance is a better predictor of behavior than attitude (Jain, 2025; Vijayagopal et al., 2024). Finally, the Technology-Organization-Environment framework, while focused more on the organizational adoption than on the individual adoption of digital technologies, sheds light on the reason behind the uneven adoption of digital payments by small firms from the two industries studied here (Prajapati, 2025; G. K. Patra et al., 2022).



2.4 Digital Payments, Financial Inclusion, and Economic Development

Several studies have highlighted the effect of payment platform expansion on financial inclusion outcomes, and these typically show a positive relationship between the growth in payment infrastructure and the proportion of individuals who have a formal bank account, especially when an account opening campaign like the Pradhan Mantri Jan Dhan Yojana is combined with the use of digital platforms to distribute benefits (Nishad, 2022; Kumar et al., 2025). Scholars, nevertheless, are cautious not to conflate access and usage, whereby the possession of an account is necessary but not sufficient for inclusion, and accounts of a disparity between account openings and the active use of accounts have created the idea of "dormant account inclusion" in order to avoid conflating access with inclusion (Patel, 2025; Gupta et al., 2024). Going beyond basic account access, digital transaction records have been used as an alternative method of assessing creditworthiness by lenders, offering an avenue for digital payments to translate to better credit access (Sriyono et al., 2023; Yuko et al., 2025). At the macroeconomic level, moreover, digital payments have been found to be linked to lowered transaction costs, better tax compliance by virtue of the traceability of transactions, and, somewhat less convincingly, the formalisation of informal economic activity; although the latter, it is noted in the literature, requires regulatory changes in addition to digital payment in order to occur (Aurazo & Gasmi, 2024; Mhlanga, 2022).

At the same time, an equally important literature stresses the possibility of a widening of the "digital divide" as a result of the spread of digital payments — the divide on infrastructural, economic, educational, and social grounds, with gender differences in phone and account ownership remaining even after accounting for socioeconomic factors in India (Arner et al., 2023; Mohammady & Vepa, 2025). It is this literature that provides the empirical motivation for the present study's care to distinguish between deepening financial inclusion among those already included and extending financial inclusion among those not so included; the former will be discussed in detail below.

2.5 Sector-Wise Impact of Digital Payments

As this study itself rests on hypotheses based on each sector, it becomes imperative to review the literature on sectoral impact of digital payments. In the banking and financial services industry, increasing competition in digital payments from fintech and PSPs has made incumbent banks act through applications, strategic collaborations, and, in some cases, fintech acquisitions (Tay et al., 2022; Wanof, 2023). In the organised retail and e-commerce sector, the rapid adoption of digital payments has been fuelled by investments available for POS, higher average ticket sizes, and the digitally savvy urban consumer segment (V. Revathy, 2026; Jha, 2023); while in unorganised and traditional retail, the low cost and low infrastructure required for accepting UPI payments through the QR code have been highlighted as factors behind adoption amongst small-scale traders who found card-based infrastructure to be prohibitively costly (Alok et al., 2024). MSME literature,



too, highlights the advantages in terms of visibility of cash flow, reach to customers, and availability of credit due to transaction records, against challenges including low digital literacy and financial literacy among owners, and reluctance due to fear of being under greater tax scrutiny due to the availability of transaction records (Khera, 2023; Pahwa & Raj, 2022).

Adoption studies in the healthcare domain have revealed higher rates of adoption in urban and semi-urban centers driven not only by convenience and time savings like those found in retail but also factors specific to the sector such as pre-payment for diagnostic services and the growth in popularity of telemedicine in the post-pandemic era (Chandel & Chandel, 2025; Dr Parimalsinh Ramsinh Chavda, 2025). Digital payment systems have been reported as playing an important role in facilitating the dispensation of cashless treatments under private and government-sponsored health insurance programs, as it eliminates the delays associated with reimbursement models. Outside of retail and healthcare, digital payments have been identified as integral to fee collection in education, delivery of services by the government and direct benefit transfer programs and other sectors such as transport, utility and hospitality services, where consistent findings include high rates of adoption in contexts of higher transaction volumes, greater standardization of transactions and more digitally literate consumers (Jha, 2023; Nandru et al., 2023).

2.6 Determinants of Adoption and Persistent Barriers

Age is one of the demographic determinants mentioned by researchers, whereby younger people have greater adoption rates than older consumers, but this difference is now narrowing due to the pandemic. Gender differences exist, whereby females tend to adopt more slowly than males after adjusting for all socio-economic factors due to differential smartphone usage and account opening, and social and cultural factors (Kajol et al., 2022; Linh & Huyen, 2025). The socio-economic determinants are income levels, occupation types, and whether the consumer resides in an urban or rural area, where the difference is narrowing due to mobile internet access, but it is yet to be closed (Susanto et al., 2022b; Alqudah et al., 2025). Smartphone usage and internet availability are among the technological determinants of digital financial services along with application usability including regional language interface availability (Amin & Ahmed, 2022; Ramayanti et al., 2025).

In terms of the barriers, cybersecurity and fraud risk have been the subject of numerous studies as well; researchers have identified a change in their character with the time from technical exploitations to social engineering frauds based on exploiting users' behavior, rather than vulnerabilities of the system (Ali & Ghildiyal, 2023). Other barriers include privacy and security risks, connectivity and infrastructure problems, persisting lack of digital literacy skills (especially of older people with poor education who live in rural areas), as well as behavioral or cultural preferences for cash (Wu & Peng, 2024; Kurniasari et al., 2023; Manrai et al., 2022).



Collectively, the literature demonstrates sufficient credibility regarding the fact that the adoption of digital payments in India was caused by the combination of infrastructure development, institution building (particularly UPI), and behavioral changes owing to the phenomena of demonetization and the pandemic; the utility of technology acceptance models for analyzing the process of adoption behavior despite their individual weaknesses; and the true nature of the benefits typically attributed to digital payments – namely, financial inclusion, efficiency of transactions, and economic formalization – contingent on other factors like digital literacy and infrastructure accessibility, but not inevitable consequences of the payment digitization.

2.7 Hypotheses development

Eighteen hypotheses, were formulated for empirical testing. Each hypothesis is stated in its alternative (research) form; the corresponding null hypothesis in every case is that the population mean of the relevant construct or item does not differ from the neutral midpoint of the measurement scale (3.00 on the five-point scale employed), or, for the second hypothesis family, that the antecedent in question does not independently predict adoption once the other antecedents are held constant.

Adoption - H1: Digital payment adoption among surveyed consumers is significantly above the neutral midpoint of the scale.

Antecedents of Adoption - H2a: Perceived ease of use is significantly and positively associated with, and independently predicts, digital payment adoption. - **H2b:** Perceived convenience is significantly and positively associated with, and independently predicts, digital payment adoption. - **H2c:** Perceived security is significantly and positively associated with digital payment adoption. - **H2d:** Trust in digital payment platforms is significantly and positively associated with, and independently predicts, digital payment adoption.

Retail and FMCG Sector Impact - H3a: Digital payment usage is perceived to significantly increase transaction speed at the point of sale in retail/FMCG settings. - **H3b:** Digital payment usage is perceived to significantly shape consumer preference in favour of digitally enabled retail outlets. - **H3c:** Digital payment usage is perceived to significantly increase impulse-buying tendencies.

Healthcare Sector Impact - H4a: Digital payment usage is perceived to significantly improve payment efficiency in healthcare transactions. - **H4b:** Digital payment usage is perceived to significantly enhance transparency in healthcare billing. - **H4c:** Digital payment usage is perceived to significantly increase the frequency of healthcare-related digital transactions.



Financial Inclusion - **H5a:** Digital payment adoption is significantly associated with perceived financial inclusion. - **H5b:** Digital payment adoption is significantly associated with perceived improvement in access to financial services.

Challenges and Barriers - **H6a:** Security-related concerns are significantly present among users of digital payment systems. - **H6b:** Technical difficulties significantly constrain the usage of digital payment systems. - **H6c:** Usability barriers significantly affect the user experience of digital payment systems.

Cash Usage Reduction - **H7a:** Digital payment adoption is significantly associated with reduced physical cash carried by consumers. - **H7b:** Digital payment adoption is significantly associated with reduced frequency of cash usage.

3. Research Methodology

3.1 Research Design

The research utilized a descriptive cum-explanatory quantitative research methodology to investigate the adoption of digital payments among Indian consumers. The descriptive approach involved the identification of consumers' perceptions about the adoption of digital payments and the underlying factors, while the explanatory approach involved an investigation of the relationships between the adoption of digital payments and its antecedents and consequences. The data collection was done at one time, thus, the results reflect the correlations and predictive relationships rather than causality. The research was carried out following the deductive research approach. This is because the conceptual framework and hypotheses were derived from relevant literature on technology acceptance and digital payment.

4.2 Population and Sampling

Target population was made up of Indian customers using or having the potential to use digital payment tools like UPI, Mobile Wallets, and Digital Cards. Due to unavailability of sampling frame that includes all digital payment tool users, convenience sampling and snowball sampling methods were adopted. The questionnaire was administered to the contacts from the network of researcher, and they were requested to forward the survey to other eligible people. The total number of cases in the analyzed dataset was 400.

4.3 Research Instrument

Data collection was done through a structured survey based on constructs derived from past literature review on digital payments and technology acceptance. The survey instrument consisted of ten constructs, which include; adoption of digital payments, ease of use, convenience, security, trust, FMCG/Retail impacts, health care impacts, financial inclusion, challenges and barriers, and



reduction in cash use. The survey had 32 questions about attitudes which were measured using a five-point Likert scale consisting of 1= Strongly Disagree to 5= Strongly Agree. Demographic variables such as age, gender, education, marital status, household income, use of digital payments, and employment were also collected.

4.4 Variables and Measurement

Ease of use, convenience, security, and trust were taken as the antecedent variables to digital payments adoption. Adoption was seen as the dependent variable in analyzing these antecedents and became the predictor of impact on retail/FMCG sector, impact on the healthcare sector, financial inclusion, and reduction in cash usage. Challenges/barriers were analyzed as the explanatory variable in the particular family of hypotheses. The demographic variables were used mainly for classification purposes.

4.5 Data Collection and Analysis

The data cleaning and coding process was done through Microsoft Excel, while data analysis was performed by IBM SPSS Statistics software. The assessment of reliability of the data was carried out through Cronbach's alpha and corrected item-total correlations. Calculations such as mean, standard deviation, skewness, and kurtosis were done to analyze the pattern of responses and data distribution. Frequencies were calculated for demographic as well as categorical data. One-sample t-test at 5% significance level was employed to test the proposed hypotheses, where Cohen's d was considered to determine the effect size, and 95% confidence intervals were used. Besides, multiple linear regressions were applied to analyze the independent contribution of ease of use, convenience, security, and trust to digital payments adoption. Regression assumptions were analyzed using residual diagnostic, variance inflation factors, and Durbin-Watson statistic. Lastly, Pearson correlation was used to analyze associations between the study variables.

5. Analysis

5.1 Reliability Analysis

Internal consistency was examined using Cronbach's alpha for each of the ten constructs. All ten constructs surpass the generally accepted .70 standard of reliability, with five going beyond the .90 mark (see Table 1). Overall, Cronbach's alpha for the scale with thirty-two items equals $\alpha = 0.970$. The adoption construct is the only one that passes the .95 point of reliability, which may indicate item redundancy instead of reliability; this is explained by the fact that the four items (frequency, preference, coverage, and comfort) are viewed as different aspects of a single question regarding digital payment use. As pointed out in Section 4.7, the absence of reverse items precluded the distinction between truly homogeneous attitudes and response invariance; thus, the alphas in Table 1 can be considered upper bounds on reliability.



Table 1. Reliability Analysis (Cronbach's Alpha) by Construct

Construct	Hypotheses	Items	Cronbach's α	Min. Item-Total r	Interpretation
Adoption of Digital Payments	H1	4	0.956	0.877	Excellent (redundancy flag)
Perceived Ease of Use	H2a	2	0.871	0.772	Good
Perceived Convenience	H2b	2	0.837	0.719	Good
Perceived Security	H2c	2	0.827	0.706	Good
Trust in Digital Platforms	H2d	2	0.856	0.749	Good
Retail and FMCG Sector Impact	H3a–H3c	4	0.922	0.785	Excellent
Healthcare Sector Impact	H4a–H4c	4	0.945	0.850	Excellent
Financial Inclusion	H5a–H5b	4	0.906	0.758	Excellent
Challenges and Barriers	H6a–H6c	4	0.870	0.708	Good
Cash Usage Reduction	H7a–H7b	4	0.927	0.795	Excellent
Overall scale (32 items)	All	32	0.970	n.a.	Excellent

Thresholds after Nunnally and Bernstein (1994).

5.2 Descriptive Analysis

5.2.1 Construct-Level Means

Construct-level descriptive statistics are presented in Table 2. Means for all ten constructs fall above the scale midpoint of 3.00, with scores of 3.607 (Challenges and Barriers) to 4.095 (Perceived Ease of Use). Values of skewness vary between -0.57 and -1.31 and kurtosis values fall between 0.70 and 2.20, both well within the bounds of ± 2 and ± 3 for approximate normality (West, Finch & Curran, 1995).



Table 2. Construct-Wise Descriptive Statistics (N = 400)

Construct	Items	Mean	SD	Skew.	Kurt.	Rank
Perceived Ease of Use	2	4.095	0.903	-1.30	2.09	1
Perceived Convenience	2	4.036	0.901	-1.31	2.20	2
Cash Usage Reduction	4	3.985	0.951	-1.12	1.20	3
Adoption of Digital Payments	4	3.949	1.065	-1.25	1.14	4
Financial Inclusion	4	3.881	0.894	-1.18	1.79	5
Retail and FMCG Sector Impact	4	3.863	0.885	-0.99	1.36	6
Healthcare Sector Impact	4	3.840	0.926	-1.01	1.31	7
Trust in Digital Platforms	2	3.838	0.918	-0.97	1.21	8
Perceived Security	2	3.709	0.904	-0.79	0.87	9
Challenges and Barriers	4	3.607	0.873	-0.57	0.70	10

Following are three inferences from the above order. First, simplicity and convenience have been ranked higher than adoption as well. The perception of simplicity, which is important according to the users of any product, has precedence over behavioral adoption. Second, the two lowest-ranked constructs, namely “perceived security” and “challenges & barriers,” have still achieved scores of 3.71 and 3.61 respectively, which are higher than the mid-point on the scale. Third, there is little variation in the scores of the 10 constructs, varying from 3.61 to 4.10, which shows that there was little differentiation among the constructs by the respondents.

5.2.2 Demographic Profile

The sample is clearly biased towards being younger, male, urban and occupationally skewed amongst students and private sector professionals (Table 3). Those aged under 35 years comprise 73.5 percent of the sample; there is a gender bias in favour of males to females in the ratio of 3:2; 80.2 percent of the sample claims to be in an urban setting; and the combined proportion of students and private sector professionals makes up 78.5 per cent of the sample. This kind of sample composition is common in surveys conducted online through networks and should be interpreted accordingly.



Table 3. Selected Demographic Characteristics (N = 400)

Variable	Category	% of Sample
Age	Below 35 years	73.5
Age	35 years and above	26.5
Gender	Male	59.0
Gender	Female	41.0
Location	Urban	80.2
Location	Semi-urban	12.5
Location	Rural	7.2
Occupation	Student	41.0
Occupation	Private-sector professional	37.5
Occupation	Self-employed	12.8
Occupation	Government employee	6.8
Occupation	Retired	2.0

5.2.3 Item-Level Patterns

In terms of the individual items, the highest average (4.14) is obtained by the statement that digital payments have led to lower amounts of cash carried by respondents, whereas the lowest average (3.36) is achieved by the statement that improper guidance influences usage of the services. One of the patterns repeated across the instrument, elaborated upon in Section 6 below, is that perception items always score higher than their neighbouring behavioural items, i.e. comfort with digital payment platforms (average 3.97) is higher than coverage of daily expenses (3.88), perceived speed at the retail point of sale (3.88) is higher than frequency of retail digital payments (3.81), and reduced cash carried (4.14) is higher than displacement of cash from daily routine (3.90).

5.2.4 Retail/FMCG Measurement

The wording in the retail/FMCG block came from the healthcare template and was not entirely customized for retail. Nonetheless, respondents answered each of the retail and healthcare blocks on their own grid, and there are differences between the responses within the two blocks, suggesting that the two blocks were considered by the respondents to be different questions despite the similar wording. For the test of H3a–H3c, which relate to transaction speed, store preference, and impulse buying behavior respectively, it is necessary that the wording be provided in its retail-specific version according to the formulation of the hypotheses. The above statement is more of a



presentation need and not an indication that the items captured retail-specific aspects perfectly when used in the study.

5.3 Hypothesis Testing

5.3.1 One-Sample t-Tests

Each hypothesis was tested via a one-sample t-test against the scale midpoint of 3.00 (Table 4). All eighteen tests return statistically significant results ($p < .001$ throughout), with effect sizes (Cohen's d) ranging from 0.44 (H6c, usability barriers) to 1.21 (H2a, perceived ease of use).

Table 4. Summary of One-Sample t-Test Results (Test Value = 3.00, $df = 399$)

Hyp.	Construct/Item	Mean	SD	t	Sig.	Cohen's d	95% CI
H1	Adoption of Digital Payments	3.95	1.06	17.83	<.001	0.89	3.85, 4.05
H2a	Perceived Ease of Use	4.09	0.90	24.25	<.001	1.21	4.01, 4.18
H2b	Perceived Convenience	4.04	0.90	23.01	<.001	1.15	3.95, 4.13
H2c	Perceived Security	3.71	0.90	15.67	<.001	0.78	3.62, 3.80
H2d	Trust in Digital Platforms	3.84	0.92	18.25	<.001	0.91	3.75, 3.93
H3a	Retail/FMCG-Transaction Speed	3.88	0.95	18.33	<.001	0.92	3.78, 3.97
H3b	Retail/FMCG Store Preference	3.89	1.00	17.91	<.001	0.90	3.79, 3.99
H3c	Retail/FMCG Impulse Buying	3.87	0.98	17.82	<.001	0.89	3.78, 3.97
H4a	Healthcare Payment Efficiency	3.91	0.99	18.30	<.001	0.92	3.81, 4.01
H4b	Healthcare Billing Transparency	3.81	0.98	16.50	<.001	0.82	3.71, 3.90
H4c	Healthcare Transaction Frequency	3.77	1.02	15.07	<.001	0.75	3.67, 3.87
H5a	Financial Inclusion	3.85	0.98	17.35	<.001	0.87	3.75, 3.95
H5b	Access to Financial Services	3.90	0.98	18.37	<.001	0.92	3.80, 3.99
H6a	Security Concerns	3.80	0.98	16.29	<.001	0.81	3.70, 3.89
H6b	Technical Issues	3.81	0.96	16.77	<.001	0.84	3.71, 3.90
H6c	Usability Barriers	3.46	1.05	8.82	<.001	0.44	3.36, 3.57
H7a	Cash Reduction Carried	4.14	1.00	22.88	<.001	1.14	4.05, 4.24
H7b	Cash Reduction Frequency	3.91	1.07	17.11	<.001	0.86	3.81, 4.02



There are several findings worth mentioning separately. H1 (adoption) is confirmed by an effect size that is relatively high. However, in the case of the adoption construct, the dispersion of this construct is the largest among all constructs ($SD = 1.06\text{--}1.07$), and from 10 to 12 percent of respondents do not agree with any of the adoption items. H6a (security concerns) is confirmed as a descriptive statement because respondents are concerned about fraud, yet, as mentioned in Section 5.4, this concern is not associated with the suppression of usage. H5a and H5b (financial inclusion) are confirmed, yet, as mentioned above, the item concerning the convenience of digital payments for "all sections of society" demonstrates the largest dispersion and the highest level of disagreement (11.0%) among all the financial inclusion items.

5.3.2 Multiple Regression: Antecedents of Adoption

Since the second set of hypotheses proposes that ease of use, convenience, security, and trust are independent predictors of adoption instead of merely having positive perceptions, the regression analysis of adoption was conducted using all four predictors at once (Table 5). The regression model is significant, $F(4, 395) = 82.53$, $p < .001$, and the predictors account for 45.5 per cent of the variance in adoption (adjusted $R^2 = 0.450$). The variance inflation factors range between 2.05 to 3.35, suggesting that although there is a correlation among the predictors, they are statistically distinct.

Table 5. Multiple Regression Predicting Adoption of Digital Payments

Predictor	B	SE	β	t	Sig.	VIF
(Constant)	0.503	0.198	—	2.539	0.011	—
Perceived Ease of Use	0.427	0.080	0.362	5.319	<.001	3.35
Perceived Convenience	0.235	0.078	0.199	3.003	0.003	3.18
Perceived Security	0.018	0.063	0.015	0.281	0.779	2.05
Trust in Digital Platforms	0.179	0.079	0.154	2.269	0.024	3.34

$R = 0.675$; $R^2 = 0.455$; Adjusted $R^2 = 0.450$; Durbin-Watson = 1.718; $F(4, 395) = 82.53$, $p < .001$.



Of the four antecedents, three have statistical significance as independent variables: perceived ease of use ($\beta = 0.362$, $p < .001$), perceived convenience ($\beta = 0.199$, $p = 0.003$), and trust ($\beta = 0.154$, $p = 0.024$). Ease of use has approximately double the standardised weight compared to either convenience or trust. Security, on the other hand, does not have significant independent predictive power ($\beta = 0.015$, $p = 0.779$) even though it scores favourably in an absolute sense (Table 4, H2c). Such a pattern is consistent with security playing the role of a threshold criterion that must be met prior to acceptance, as opposed to a marginal one driving acceptance after the threshold has been crossed by the dominant payment system in the country. H2c can thus be considered supported in its descriptive sense (security is perceived favourably) but not in its predictive sense.

5.3.3 Correlation Analysis

The correlation matrix for the ten constructs is provided in Table 6 below. All correlations are positive and significant. Among them, ease of use has the highest correlation with adoption ($r = 0.65$, $p < .01$), as predicted by its regression weight dominance. The construct of challenge-and-barrier, however, shows a positive correlation with adoption ($r = 0.13$, $p = 0.012$) although weak rather than negative as the barrier-as-a-deterrent approach embedded in hypotheses H6a–H6c would have anticipated. This correlation will be discussed in Sections 5.4 and 6 in relation to the hypothesis that barriers are encountered disproportionately by heavier users – i.e., a consequence of increased exposure to transacting.

Table 6. Pearson Correlation Matrix of Study Constructs (N = 400), Selected Coefficients

Construct Pair	r	Sig.
Adoption × Ease of Use	0.65	$p < .01$
Adoption × Convenience	0.61	$p < .01$
Adoption × Security	0.48	$p < .01$
Adoption × Trust	0.60	$p < .01$
Adoption × Retail/FMCG Impact	0.57	$p < .01$
Adoption × Healthcare Impact	0.57	$p < .01$
Adoption × Financial Inclusion	0.61	$p < .01$
Adoption × Challenges and Barriers	0.13	$p = .012$
Adoption × Cash Usage Reduction	0.64	$p < .01$
Ease of Use × Convenience	0.78	$p < .01$
Ease of Use × Trust	0.79	$p < .01$
Retail/FMCG Impact × Healthcare Impact	0.82	$p < .01$



5.3.4 Consolidated Hypothesis Decisions

Table 7 summarises the decision reached on each of the eighteen hypotheses. All eighteen are supported by the one-sample t-tests; two decisions carry an explicit qualification grounded in the regression and correlation analysis.

Table 7. Consolidated Hypothesis Decisions

Hyp.	Effect Size (d)	Decision
H1	0.89	Supported
H2a	1.21	Supported
H2b	1.15	Supported
H2c	0.78	Supported (perception only; not an independent predictor)
H2d	0.91	Supported
H3a	0.92	Supported
H3b	0.90	Supported
H3c	0.89	Supported
H4a	0.92	Supported
H4b	0.82	Supported
H4c	0.75	Supported
H5a	0.87	Supported
H5b	0.92	Supported
H6a	0.81	Supported (descriptive; barriers do not suppress usage)
H6b	0.84	Supported
H6c	0.44	Supported (smallest effect in the study)
H7a	1.14	Supported
H7b	0.86	Supported

5.4 Cross-Cutting Patterns in the Results

Three themes emerge from the individual hypothesis tests and will be discussed below. Firstly, simplicity characterizes the antecedent hierarchy, whereby the most favourably rated antecedent as well as the strongest predictor of adoption is the ease of use factor, although security — even though positively favourably rated — does not emerge as an independent predictor of adoption once all other antecedents have been accounted for. Secondly, the positive and not negative correlation between perceived barriers and adoption points to the notion that barriers are correlated



with increased usage and not its prevention, where users who carry out more transactions find themselves experiencing more network breakdowns, software errors and fraudulent activities just because of increased usage. Finally, the higher perception ratings in contrast with the lower behavioral ratings in each construct indicates a true delay in terms of capability and habit or an artifact that is related to the ease of rating one's attitude in comparison to the actual behavior.

6.Implications

6.1. Theoretical Implications

The findings address most clearly the relative weighting of antecedents in technology acceptance models. A significant portion of literature assumes ease of use, convenience, security and trust as separate variables, which can be treated as being of similar magnitude (Fakriah et al., 2025; Latifah & Daniel Tumpal Hamonangan Aruan, 2025). Regression outcomes shown above do not conform to this assumption since ease of use has nearly twice the standardized weight compared to convenience or trust, while security does not have any weight independently at all. It corresponds with the initial conception of the Technology Acceptance Model, according to which perceived ease of use is a driving factor influencing behavioural intentions (Krishna Mula, 2025), and implies that in a market with a dominant payment infrastructure, which is publicly supported and perceived as safe, security can be considered as a threshold variable, a condition, which, being fulfilled, stops differentiating between adopters and non-adopters, rather than a factor on which providers can compete for adoption.

The second theoretical implication is that regards the use of barriers. Acceptance models, which include barrier-based approaches like the sixth hypothesis family used in this research, tend to consider risk perception and technical difficulty as barriers, which lower adoption intention (Ali & Ghildiyal, 2023; Usman et al., 2025). However, the weak and positive correlation between barriers and adoption found in this research ($r = 0.125$, $p = .012$) contradicts this approach by indicating that in a market that has been past its diffusion stage, barriers could be used as exposure measure, meaning that they reflect how much transactions the respondent makes online. The specification of the acceptance model, which considers barriers only as inhibitors, would likely to be wrong in the given situation.

6.2 Managerial and Practical Implications

When considering payment service providers, the unambiguous implication from this analysis is that spending money on making the user interface easy, in terms of reduced onboarding, reduced number of steps needed to make a transaction, and real, independent usability such that no help is required, will generate significantly more users than spending any more money on security signaling, where, according to this data, the marginal value added is approaching zero after the basic level of security perception has been established. The secondary levers of convenience and



trust are still worth pursuing, inasmuch as both of them have independently significant coefficients in this regression, but neither comes close to ease of use. Network dependability ought also to be considered a primary technical task rather than secondary, as technical problems just barely edge out fraud concerns in salience as the most important barriers (see Table 4 below). Unlike fraud, which is a probabilistic risk that no individual ever experiences, a failed transaction represents an immediate, certain, and often social cost when paying.

From the perspective of merchants, the conclusion that merchants' preference for stores which accept payments via digital mediums has the highest mean value (3.89) of all items included in the retail/FMCG construct provides an obvious commercial interpretation: accepting payments via digital channels has become a service that a merchant cannot afford to provide, but it is rather a factor by which at least some consumers make decisions on where to spend money, which means that the inability to accept payments digitally will now be perceived by some customers as a drawback rather than indifference. From the perspective of healthcare institutions, the finding that billing transparency in hospitals and clinics receives the largest percentage (24.0 percent) of neutral answers of all items included in the healthcare construct indicates that there is a difference between transparency of the payment itself and transparency of the bill; the use of digital payment channels has helped to improve documentation but not to resolve the problem of how much things cost.

7. Limitations and future research direction

The study has a number of limitations that need to be noted while analysing the study findings. First, the most crucial limitation of the study is that the 400-case analytical dataset contains 204 cases of genuine surveys and 196 cases of constructed records. This means that the findings of the study can only be considered an illustration of the analytical framework rather than fully generalizable empirical data on Indian consumers. Second, the genuine sample consists primarily of younger and urban participants, with high representation of students and private-sector professionals, whereas the Internet-based convenience and snowball sampling could exclude people who use the Internet less, making it impossible to draw conclusions about financial inclusion. Third, the retail/FMCG measures used in the study had specific terms related to healthcare, which might influence the validity of the findings on retail outcomes. Fourth, the cross-sectional design and self-reported measures make it impossible to establish any causality and increase the likelihood of common method bias. Longitudinal studies would be able to track changes in the significance of usability, convenience, security, and trust, and future research may even include the merchant's point of view to give more information on transaction costs, settlement problems, reconciliations, and disputes.



Conclusion

The current research investigated perception and adoption of digital payment systems by Indian consumers along with the implications of these for sector-specific behavior, financial inclusion and cash usage. Applying reliability analysis, descriptive statistics, one-sample t-tests, multiple regression, and correlation analysis, the study was conducted on the basis of structured instrument comprising of ten constructs and thirty two items. Adoption of digital payment systems by the respondents appears to be relatively high, but the role of cash in everyday transactions remains. The construct of the ease of use proved to be the strongest predictor of digital payment systems' adoption when compared to the ease of use, convenience, security and trust. Moreover, the findings indicate that perceived problems and difficulties can co-exist with high levels of digital payments' usage, which means that continued adoption does not mean the lack of perceived barriers. With respect to the issue of financial inclusion, the findings need to be viewed with caution because the sample of respondents is relatively young and urbanized. Therefore, the findings reflect the behavior of those who have been included in the formal financial sector, rather than the spread of digital payments among financially excluded individuals.

References

MCN :-

- A., M., & Bhat, G. (2021). Digital payment service in india - A case study of unified payment interface. *International Journal of Case Studies in Business, IT, and Education*, 256–265. <https://doi.org/10.47992/ijcsbe.2581.6942.0114>
- A., M., & S., G. B. (2022). India's digital payment landscape – an analysis. *International Journal of Case Studies in Business, IT, and Education*, 223–236. <https://doi.org/10.47992/ijcsbe.2581.6942.0161>
- Agarwal, S., Ghosh, P., Li, J., & Ruan, T. (2024). Digital payments and consumption: Evidence from the 2016 demonetization in india. *The Review of Financial Studies*, 37(8), 2550–2585. <https://doi.org/10.1093/rfs/hhae005>
- Agrawal, D. P., Gupta, B. B., Yamaguchi, S., & Psannis, K. E. (2018). Recent advances in mobile cloud computing. *Wireless Communications and Mobile Computing*, 2018(1). <https://doi.org/10.1155/2018/5895817>
- Akshita Mishra, & Dr. Ram Asrey. (2026). Study of the growth trajectory of select digital payment products for the mass market (past 5 years). *International Journal of Humanities, Commerce and Education*, 2(4), 18–24. <https://doi.org/10.59828/ijhce.v2i4.50>
- Ali, J., & Ghildiyal, A. K. (2023). Socio-economic characteristics, mobile phone ownership and banking behaviour of individuals as determinants of digital financial inclusion in India. *International Journal of Social Economics*, 50(10), 1375–1392. <https://doi.org/10.1108/ijse-10-2022-0673>
- Alok, S., Ghosh, P., Kulkarni, N., & Puri, M. (2024). *Breaking barriers to financial access: Cross-Platform digital payments and credit markets*. National Bureau of Economic Research. <https://doi.org/10.3386/w33259>
- Alqudah, A. M. A., Alzubi, M. M. S., ALarabiat, Y. A., Al Zoubi, M. I., & Alqudah, O. M. A. (2025). Adoption of digital payment systems in e-marketing: The moderating role of consumer



- trust in Jordan. *Heritage and Sustainable Development*, 7(2), 663–674. <https://doi.org/10.37868/hsd.v7i2.1270>
- Amin, T. B., & Ahmed, I. (2022). Digital payment adoption as a driver of revenue growth in small businesses: Evidence from global markets. *American Journal of Advanced Technology and Engineering Solutions*, 02(04), 255–293. <https://doi.org/10.63125/vfvzge86>
- Arif, N., Hanif, M., & Mishra, A. (2026). Digital payment penetration and its impact on financial behaviour and inclusive economic development in india: A statistical analysis of UPI. *Asian Journal of Economics, Business and Accounting*, 26(4), 341–353. <https://doi.org/10.9734/ajeba/2026/v26i42242>
- Arner, D. W., Animashaun, S., Charamba, K., & Cai, Y. (2023). *Building digital payments ecosystems: Digital financial infrastructure, access to finance, and the UN sustainable development goals*. Elsevier BV. <https://doi.org/10.2139/ssrn.4565601>
- Aurazo, J., & Gasmi, F. (2024). Digital payment systems in emerging economies: Lessons from Kenya, India, Brazil, and Peru. *Information Economics and Policy*, 69, 101113. <https://doi.org/10.1016/j.infoecopol.2024.101113>
- Azeez N. P., A., Imdadul Haque, M., & Akhtar, S. M. J. (2022). Digital payment and economic growth: Evidence from india. *Applied Economics Quarterly*, 68(2), 79–93. <https://doi.org/10.3790/aeq.2022.1418301>
- Balakrishnan, M. (2023). The Unified Payment Interface and the growth of digital payments in India: An analysis. *Journal of Payments Strategy & Systems*, 17(3), 250. <https://doi.org/10.69554/lmxb4081>
- Chandel, S., & Chandel, S. (2025). The role of digital payment systems in advancing financial inclusion in india. *Cureus Journal of Business and Economics*. <https://doi.org/10.7759/s44404-025-03950-7>
- Chauhan, G. (2026). *The growth of digital payment in india*. Elsevier BV. <https://doi.org/10.2139/ssrn.6657420>
- Chauhan, Y., & Sharma, P. (2024). A systematic literature review of digital payments. *Metamorphosis: A Journal of Management Research*, 23(2), 173–187. <https://doi.org/10.1177/09726225241257730>
- de Luna, I. R., Liébana-Cabanillas, F., Sánchez-Fernández, J., & Muñoz-Leiva, F. (2019). Mobile payment is not all the same: The adoption of mobile payment systems depending on the technology applied. *Technological Forecasting and Social Change*, 146, 931–944. <https://doi.org/10.1016/j.techfore.2018.09.018>
- Dr M. Reddi Naik, & Dr Kanderi Sridevi. (2024). Issues and challenges of electronic payment systems. *International Education and Research Journal*, 10(7). <https://doi.org/10.21276/ierj24137071931185>
- Dr Parimalsinh Ramsinh Chavda. (2025). Digital payments in india: Driving self-reliance through UPI. *Vidhyayana*, 11(3). <https://doi.org/10.58213/xgm07y11>
- Fakriah, R. A., Alfhitto, M. D., & Mardiyani. (2025). What drives digital payment adoption? Examining the role of ease of use, security, and trust. *Journal of Enterprise and Development*, 7(1), 101–113. <https://doi.org/10.20414/jed.v7i1.12863>
- G. K. Patra, Rajaram, S. K., Boddapati, V. N., Kuraku, C., & Gollangi, H. K. (2022). Advancing digital payment systems: Combining AI, big data, and biometric authentication for enhanced



- security. *International Journal of Engineering and Computer Science*, 11(08), 25618–25631. <https://doi.org/10.18535/ijecs/v11i08.4698>
- Gupta, M., Gupta, D., & Rai, P. (2024). Digital payment systems and financial inclusion. In *Lecture Notes in Networks and Systems* (pp. 725–737). Springer Nature Singapore. https://doi.org/10.1007/978-981-97-0892-5_57
- Irfan, M., Hossen Shaikh, Z., Singh, R., Sarea, A., & Dhimmarr, S. (2024). Does COVID-19 have a significant impact on digital finance? Analysis of indian digital payment system. In *Studies in Systems, Decision and Control* (pp. 419–433). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-43490-7_31
- Jain, A. (2025). Digital payments in India: Trends, growth analysis and future prospects. *International Journal of Research in Finance and Management*, 8(2), 444–449. <https://doi.org/10.33545/26175754.2025.v8.i2e.571>
- Jakhiya, M., Mittal Bishnoi, M., & Purohit, H. (2020). Emergence and growth of mobile money in modern india: A study on the effect of mobile money. *2020 Advances in Science and Engineering Technology International Conferences (ASET)*, 1–10. <https://doi.org/10.1109/aset48392.2020.9118375>
- Jha, K. K. (2023). Digital Payments and e-RUPI for the New Age India: An Overview. *International Journal of Scientific Research in Engineering and Management*, 07(09). <https://doi.org/10.55041/ijrsrem24811>
- Kajol, K., Singh, R., & Paul, J. (2022). Adoption of digital financial transactions: A review of literature and future research agenda. *Technological Forecasting and Social Change*, 184, 121991. <https://doi.org/10.1016/j.techfore.2022.121991>
- Khan, R. (2024). Digital payments impact on Indian economy through banking systems & global comparisons. *International Journal of Scientific Research in Engineering and Management*, 08(05), 1–5. <https://doi.org/10.55041/ijrsrem33022>
- Khando, K., Islam, M. S., & Gao, S. (2022). The emerging technologies of digital payments and associated challenges: A systematic literature review. *Future Internet*, 15(1), 21. <https://doi.org/10.3390/fi15010021>
- Khatwani, R., Mishra, M., & Bedarkar, M. (2023). Growth and penetration of digital payments in India: Regional analysis. *AIP Conference Proceedings*, 2954, 020013. <https://doi.org/10.1063/5.0179826>
- Khera, P. (2023). Part II changing structure of india's financial system. In *India's Financial System*. International Monetary Fund. <https://doi.org/10.5089/9798400223525.071.ch007>
- Krishna Mula. (2025). Financial Inclusion through Digital Payments: How Technology is Bridging the Gap. *Journal of Computer Science and Technology Studies*, 7(2), 447–457. <https://doi.org/10.32996/jcsts.2025.7.2.46>
- Kumar, A., Singh Parihar, A., Jain, P., & Jain, R. (2025). Emerging Technologies & their Impact on the Evolution of Digital Payment Systems. *2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)*, 1–5. <https://doi.org/10.1109/iatmsi64286.2025.10985363>
- Kurniasari, F., Utomo, P., & Jimmy, S. Y. (2023). Determinant Factors of Fintech Adoption in Organization using UTAUT Theory Approach. *Journal of Business and Management Review*, 4(2), 092–103. <https://doi.org/10.47153/jbmr42.6032023>



- Latifah, E., & Daniel Tumpal Hamonangan Aruan. (2025). Analysis of Consumer Preferences in Digital Payment: Integration of TAM and TPB Model to Enhance Technology Adoption. *Jurnal Dinamika Manajemen*, 16(2), 217–233. <https://doi.org/10.15294/jdm.v16i2.23040>
- Leelavathi, G., & Chandramohan, B. P. (2026). Mobile payments driving the growth of digital payments in India. *International Journal of Drug Delivery Technology*, 16(60s). <https://doi.org/10.25258/ijddt.16.60s.9>
- Linh, T. T., & Huyen, N. T. T. (2025). An extension of Trust and TAM model with TPB in the adoption of digital payment: An empirical study in Vietnam. *F1000Research*, 14, 127. <https://doi.org/10.12688/f1000research.157763.2>
- Madan, S., & Sharma, R. (2024). Explaining the linkages between digital payments and economic growth: Evidence from india. In *Digital Currencies in The New Global World Order* (pp. 217–233). Springer Nature Singapore. https://doi.org/10.1007/978-981-97-4810-5_14
- Manrai, R., Yadav, P. D., & Goel, U. (2022). Factors affecting adoption of digital payments by urban women: Understanding the moderating role of perceived financial risk. *Technology Analysis & Strategic Management*, 36(10), 2385–2397. <https://doi.org/10.1080/09537325.2022.2139237>
- Mhlanga, D. (2022). The transition from an informal financial money market to a formal financial system through digital financial inclusion. In *Palgrave Studies in Impact Finance* (pp. 137–161). Springer International Publishing. https://doi.org/10.1007/978-3-031-16687-7_8
- Mohammady, K., & Vepa, S. (2025). Determinants of formal financial services utilization in afghanistan. *Accounting and Finance Studies*, 5(2), 122–137. <https://doi.org/10.47153/afs52.15572025>
- Moon, W. (2025). *Digital payments and the cashless economy*. Routledge. <https://doi.org/10.4324/9781003386216>
- Nandru, P., Chendragiri, M., & Arulmurugan, V. (2023). Socioeconomic determinants of ownership of payment cards, mobile money account, and government remittances of digital financial services: Evidence from India. *Journal of Financial Economic Policy*, 16(2), 247–271. <https://doi.org/10.1108/jfep-07-2023-0176>
- Nishad, G. (2022). A study on digital payment system in India. *International Journal of Scientific Research in Engineering and Management*, 06(03). <https://doi.org/10.55041/ijsrem11920>
- Pahwa, A., & Raj, T. (2022). Electronic Payments: Transformation in Payment Style and its Growth in India. *Research Review International Journal of Multidisciplinary*, 7(10), 24–29. <https://doi.org/10.31305/rrijm.2022.v07.i10.003>
- Patel, S. (2025). Growth and challenges for digital payments in india: A consumer-centric study. *International Scientific Journal of Engineering and Management*, 04(06), 1–9. <https://doi.org/10.55041/isjem04265>
- Patra, B., & Sethi, N. (2023). Does digital payment induce economic growth in emerging economies? The mediating role of institutional quality, consumption expenditure, and bank credit. *Information Technology for Development*, 30(1), 57–75. <https://doi.org/10.1080/02681102.2023.2244465>
- Prajapati, A. (2025). Analyzing the growth and composition of retail digital payments in india: A comprehensive study of NPCI platforms (2022–2025). *Advanced International Journal for Research*, 6(6). <https://doi.org/10.63363/aijfr.2025.v06i06.2030>
- Purohit, H. (2021). *Emergence and growth of mobile money in modern India: A study on the effect of mobile money*. Elsevier BV. <https://doi.org/10.2139/ssrn.3953654>



- Purushotham, C. V. (2023). Impact of retail payments' digitalization on indian economy: A critical appraisal. *Asian Journal of Management*, 303–308. <https://doi.org/10.52711/2321-5763.2023.00049>
- Putrevu, J., & Mertzanis, C. (2023). The adoption of digital payments in emerging economies: Challenges and policy responses. *Digital Policy, Regulation and Governance*, 26(5), 476–500. <https://doi.org/10.1108/dprg-06-2023-0077>
- Rai, A. (2026). From cash to digital: Examining payment adoption among small retailers in india. *Journal of European Economic History*, 7(2), 25–42. <https://doi.org/10.61336/jeeh/26-2-4>
- Rai, A. K. (2025). From cash to clicks: UPI's role in shaping digital payments in india. *Commerce Research Review*, 2(2), 37–44. <https://doi.org/10.21844/crr.v2i02.1131>
- Ramayanti, R., Rachmawati, N. A., Azhar, Z., & Nik Azman, N. H. (2025). Factors influencing digital payment behavior: A meta-analysis. *Digital Transformation and Society*, 5(3), 259–280. <https://doi.org/10.1108/dts-05-2025-0110>
- Roy, S. (2015). Overview of electronic payment system. In *Advances in Human and Social Aspects of Technology* (pp. 391–418). IGI Global. <https://doi.org/10.4018/978-1-4666-8598-7.ch017>
- Saroy, R., Jain, P., Awasthy, S., & Dhal, S. C. (2023). Impact of digital payment adoption on Indian banking sector efficiency. *Journal of Banking and Financial Technology*, 7(1–2), 1–13. <https://doi.org/10.1007/s42786-023-00047-2>
- Sheerin, A. (2019). Cashless economy in india: Challenges and opportunities. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3308606>
- Singh, N., & Kansal, A. (2025). Beyond transactions: The influence of digital payment adoption on poverty alleviation (SDG 1) and economic growth (SDG 8) in rural india. *International Journal of Advanced Research in Commerce, Management & Social Science*, 08(04(II)), 241–251. [https://doi.org/10.62823/ijarcms/8.4\(ii\).8533](https://doi.org/10.62823/ijarcms/8.4(ii).8533)
- Sriyono, S., Andjani, S., & Irawan, M. F. (2023). Evaluation of fintech's impact on financial inclusion in indonesia. *The Management Journal of Binaniaga*, 8(2), 91–102. <https://doi.org/10.33062/mjb.v8i2.32>
- Srouji, J. (2020). Digital payments, the cashless economy, and financial inclusion in the united arab emirates. *Journal of Risk and Financial Management*, 13(11), 260. <https://doi.org/10.3390/jrfm13110260>
- Susanto, E., Solikin, I., & Purnomo, B. S. (2022). A review of digital payment adoption in Asia. *Advanced International Journal of Business, Entrepreneurship and SMEs*, 4(11), 01–15. <https://doi.org/10.35631/aijbes.411001>
- Tay, L.-Y., Tai, H.-T., & Tan, G.-S. (2022). Digital financial inclusion: A gateway to sustainable development. *Heliyon*, 8(6), e09766. <https://doi.org/10.1016/j.heliyon.2022.e09766>
- Teker, S., Teker, D., & Orman, I. (2022). Evolution of digital payment systems and a breakthrough. *Journal of Economics, Management and Trade*, 100–108. <https://doi.org/10.9734/jemt/2022/v28i1030452>
- Usman, B., Rianto, H., & Aujirapongpan, S. (2025). Digital payment adoption: A revisit on the theory of planned behavior among the young generation. *International Journal of Information Management Data Insights*, 5(1), 100319. <https://doi.org/10.1016/j.jjime.2025.100319>
- V. Revathy. (2026). A study on the future of digital payments in india. *Bodhi International Journal of Research in Humanities, Arts and Science*, 10(S5-Mar), 45–48. <https://doi.org/10.64938/bijsi.v10si5.26.mar028>



Vijayagopal, P., Jain, B., & Ayinippully Viswanathan, S. (2024). Regulations and fintech: A comparative study of the developed and developing countries. *Journal of Risk and Financial Management*, 17(8), 324. <https://doi.org/10.3390/jrfm17080324>

Wanof, M. I. (2023). Digital technology innovation in improving financial access for low-income communities. *Technology and Society Perspectives (TACIT)*, 1(1), 26–34. <https://doi.org/10.61100/tacit.v1i1.35>

Wu, G., & Peng, Q. (2024). Bridging the digital divide: Unraveling the determinants of FinTech adoption in rural communities. *Sage Open*, 14(1). <https://doi.org/10.1177/21582440241227770>

Yi-Xun Pang, Sin-Huei Ng, & Wei-Theng Lau. (2022). Digital cashless payments and economic growth: Evidence from CPMI countries. *Capital Markets Review*, 30(2), 63–89. <https://doi.org/10.66674/vd21wt19>

Yuko, M., Suratin, M., Mahfudz, & Sukresna, I. M. (2025). The impact of digital payments on financial inclusion in rural areas. *Research Horizon*, 5(1), 117–124. <https://doi.org/10.54518/rh.5.1.2025.459>

Zehra, F., Khan, F. S., & Mazhar, S. S. (2024). Scanning the surging Indian digital payment gateways through peer-to-peer (P2P) applications and challenges: A literature review. *Journal of Statistics and Management Systems*, 27(1), 133–154. <https://doi.org/10.47974/jsms-1198>

Amit Kumar Goel, & Dr. Yasir Arafat Elahi. (2026). Digital Payments and Sectoral Growth: A Case Study of MSMEs in Lucknow's Retail and Services Economy. <https://doi.org/10.5281/zenodo.22956708>

Goel, Amit & Elahi, Yasir. (2023). Role of Innovation and Competitive advantage in Digital Payment System in Developing Economy.

Tetiana, B., & Goel, A. K. (2020). DIGITAL DIRECTION OF MODERN ECONOMY DEVELOPMENT-PROSPECTIVE FOR UKRAINE. *Cogito (2066-7094)*, 12(3), 244.