INTERNATIONAL JOURNAL OF COMMERCE AND MANAGEMENT RESEARCH STUDIES (IJCMRS)
(Open Access, Double-Blind Peer Reviewed Journal)
ISSN Online: 3049-1908 ISSN Print:
EDU SCHOOL
ijcmrs.com

Impact of Digital Payment Systems on Consumer Behavior and Financial Inclusion

Remya Krishna

Assistant Professor, School of Commerce and Professional Studies, Marian College Kuttikkanam, India.

Article information

Received:9th September 2025
Received in revised form:16th October 2025
Accepted:20th November 2025
Available online:26th December 2025

Volume:2
Issue: 4
DOI: https://doi.org/10.5281/zenodo.18094701

Abstract

This study investigates the impact of digital payment systems on consumer behavior and financial inclusion in emerging economies over the period 2018-2024. Utilizing a mixed-methods approach combining quantitative analysis of transaction data from major digital payment platforms with qualitative surveys of 2,500 consumers across five emerging markets (India, Brazil, Nigeria, Indonesia, and Kenya), we examine the adoption patterns, behavioral shifts, and financial inclusion outcomes associated with digital payment adoption. The study employs the Technology Acceptance Model (TAM) extended with perceived risk and trust constructs, alongside panel data regression analysis to identify determinants of adoption and usage intensity. Our findings reveal that perceived ease of use, trust in digital platforms, and smartphone penetration are the strongest predictors of digital payment adoption, explaining 68% of variance in adoption rates. The results demonstrate significant improvements in financial inclusion metrics, with digital payment users showing 45% higher savings rates and 32% greater access to formal credit compared to non-users. Furthermore, the study identifies a transformation in consumer spending patterns, with digital payment users exhibiting more frequent but smaller transactions and increased participation in e-commerce activities. The COVID-19 pandemic served as a significant accelerator, with adoption rates increasing by 156% during 2020-2021. These findings carry important implications for policymakers designing financial inclusion strategies, financial institutions developing digital products, and researchers studying the transformation of consumer financial behavior in the digital age.

Keywords: - Digital payments, Financial inclusion, Consumer behavior, Technology adoption, Emerging markets

I. INTRODUCTION

The global financial landscape has undergone a remarkable transformation with the proliferation of digital payment systems, fundamentally altering how consumers conduct transactions and interact with financial services (Gomber et al., 2017). Digital payment technologies, encompassing mobile wallets, peer-to-peer payment applications, and contactless payment solutions, have emerged as powerful tools for promoting financial inclusion, particularly in regions where traditional banking infrastructure remains underdeveloped (Demirguc-Kunt et al., 2018). This technological revolution has been further accelerated by the COVID-19 pandemic, which necessitated contactless transactions and catalyzed unprecedented adoption of digital payment solutions across demographic segments (Auer et al., 2020).

The significance of digital payments extends beyond mere transactional convenience. These systems serve as gateways to formal financial services for previously unbanked populations, enabling access to savings accounts, credit facilities, insurance products, and investment opportunities (Jack & Suri, 2014). The success of mobile money platforms such as M-Pesa in Kenya and digital payment ecosystems like UPI in India has demonstrated the transformative potential of these technologies in bridging financial gaps and promoting economic participation among marginalized communities (Suri & Jack, 2016).

Understanding consumer behavior in the context of digital payment adoption is crucial for multiple stakeholders. Financial institutions require insights into adoption determinants to design effective products and services, policymakers need evidence-based guidance for regulatory frameworks that balance innovation with consumer protection, and researchers seek to understand how digital technologies reshape financial behaviors and outcomes (Venkatesh et al., 2012). Despite growing

interest in this area, comprehensive studies examining the multifaceted impacts of digital payment adoption across diverse emerging market contexts remain limited.

This study aims to address this gap by examining the impact of digital payment systems on consumer behavior and financial inclusion across five emerging economies. The research makes three primary contributions. First, it provides empirical evidence on adoption determinants using an extended Technology Acceptance Model incorporating trust and risk perceptions. Second, it quantifies the relationship between digital payment usage and financial inclusion outcomes. Third, it documents behavioral changes in spending patterns and financial management practices associated with digital payment adoption. The findings offer actionable insights for stakeholders seeking to leverage digital payment technologies for financial inclusion and economic development.

II. LITERATURE REVIEW

2.1. Technology adoption and digital payments

The Technology Acceptance Model (TAM), originally proposed by (Davis, 1989), has been widely applied to understand consumer adoption of digital financial services. The model posits that perceived usefulness and perceived ease of use are primary determinants of technology adoption intentions and behaviors. Subsequent extensions of TAM have incorporated additional constructs relevant to financial technologies, including perceived risk, trust, and social influence (Venkatesh et al., 2003).

Research on digital payment adoption has identified several critical factors influencing user acceptance. (Liébana-Cabanillas et al., 2014) found that perceived security and trust significantly impact mobile payment adoption intentions in developed markets. Similarly, (Oliveira et al., 2016) demonstrated that compatibility with lifestyle and perceived technology security are strong predictors of mobile payment adoption in Portugal. In emerging market contexts, additional factors such as network effects, agent accessibility, and regulatory environment have been identified as influential (Mas & Morawczynski, 2009).

The role of trust in digital payment adoption has received particular attention. (Chandra et al., 2010) developed a trust-based adoption model demonstrating that initial trust, influenced by structural assurances and perceived reputation, significantly affects adoption intentions. (Kim et al., 2010) further established that trust mitigates perceived risk, which otherwise negatively impacts adoption. These findings highlight the importance of building consumer confidence in digital payment platforms through robust security measures and transparent practices.

2.2. Digital payments and financial inclusion

Financial inclusion, defined as access to and usage of appropriate financial services by all segments of society, has emerged as a global development priority (World Bank, 2014). Digital payment systems have been recognized as powerful enablers of financial inclusion, particularly in regions with limited banking infrastructure (Demirguc-Kunt et al., 2018). The Global Findex Database reveals that 1.4 billion adults gained access to financial accounts between 2011 and 2017, with digital payments playing a significant role in this expansion.

The landmark study by (Jack & Suri, 2014) on M-Pesa in Kenya demonstrated that mobile money services lifted approximately 2% of Kenyan households out of poverty, primarily by enabling improved financial resilience and labor market participation. Subsequent research by (Suri & Jack, 2016) confirmed these findings and identified mechanisms through which mobile money promotes financial inclusion, including reduced transaction costs, improved risk management, and enhanced savings behavior.

Research has also examined the relationship between digital payment adoption and access to formal credit. (Björkegren & Grissen, 2020) found that mobile phone usage patterns can predict creditworthiness, enabling digital lenders to extend credit to previously underserved populations. Similarly, studies in India have documented how digital payment histories enable small merchants to access working capital loans through fintech platforms (Ghosh & Vallee, 2021).

2.3. Consumer behavior transformation

Digital payments have been associated with significant changes in consumer financial behavior. Research indicates that digital payment users demonstrate different spending patterns compared to cash users, with implications for personal financial management (Prelec & Simester, 2001). The reduced "pain of paying" associated with digital transactions may lead to increased spending, while the digital record-keeping features may enhance budget awareness and financial planning (Soman, 2003).

The COVID-19 pandemic has accelerated digital payment adoption and associated behavioral changes. (Auer et al., 2020) documented significant increases in contactless payment usage during the pandemic, while (Sheth, 2020) identified lasting behavioral changes in consumer preferences for digital channels. These pandemic-induced shifts provide a natural experiment for studying the relationship between digital payment adoption and consumer behavior transformation.

III. METHODOLOGY

3.1. Research design and data collection

This study employs a mixed-methods research design combining quantitative survey data with secondary transaction data analysis. The primary data collection involved a structured questionnaire administered to 2,500 respondents across five emerging markets: India (n=600), Brazil (n=500), Nigeria (n=450), Indonesia (n=500), and Kenya (n=450). The sample was stratified by demographic characteristics including age, income level, education, and urban/rural location to ensure representativeness.

The survey instrument was designed based on established scales for measuring technology adoption constructs (Davis, 1989; Venkatesh et al., 2003), extended with items measuring trust (McKnight et al., 2002), perceived risk (Featherman & Pavlou, 2003), and financial inclusion outcomes. All items were measured on seven-point Likert scales. The questionnaire underwent rigorous validation including expert review, cognitive interviews, and pilot testing in each country context.

Secondary data on transaction patterns were obtained through partnerships with two major digital payment platforms operating across the study countries. This anonymized transaction data, covering the period January 2020 to December 2023, enabled analysis of actual usage patterns, transaction frequencies, and spending behaviors. Additionally, country-level data on financial inclusion indicators were sourced from the Global Findex Database and national financial inclusion surveys.

3.2. Analytical framework

The analytical framework integrates multiple quantitative approaches. First, structural equation modeling (SEM) is employed to test the extended Technology Acceptance Model and identify determinants of digital payment adoption. The model incorporates perceived usefulness, perceived ease of use, trust, perceived risk, and social influence as independent variables, with adoption intention and usage behavior as dependent variables.

Second, panel data regression analysis examines the relationship between digital payment usage intensity and financial inclusion outcomes. The regression model is specified as: $FI(it) = \beta_0 + \beta_1 DPU(it) + \beta_2 X(it) + \mu(i) + \varepsilon(it)$, where FI represents financial inclusion indicators (savings, credit access, insurance), DPU denotes digital payment usage measures, X represents control variables, μ captures individual fixed effects, and ε is the error term.

Third, difference-in-differences analysis leverages the COVID-19 pandemic as a natural experiment to examine the causal impact of accelerated digital payment adoption on financial behaviors. This approach compares changes in financial outcomes between high-adoption and low-adoption groups before and after the pandemic-induced digital acceleration.

IV. RESULTS AND DISCUSSION

4.1. Descriptive statistics and adoption patterns

The sample comprises 2,500 respondents with a mean age of 34.2 years (SD=11.8), 52% female, and 64% residing in urban areas. Digital payment adoption rates varied across countries, with Kenya showing the highest adoption rate (78%), followed by India (72%), Indonesia (65%), Brazil (58%), and Nigeria (51%). These variations reflect differences in digital infrastructure, regulatory environment, and the maturity of mobile money ecosystems across countries.

Transaction data analysis reveals significant growth in digital payment usage over the study period. Average monthly transactions per user increased from 12.4 in January 2020 to 28.7 in December 2023, representing a 131% increase. The average transaction value decreased from $24.50 to $18.30 over the same period, indicating a shift toward more frequent, smaller-value transactions characteristic of everyday payment behavior. The COVID-19 pandemic marked a clear inflection point, with monthly transaction volumes increasing by 156% between February and June 2020.

4.2. Determinants of digital payment adoption

The structural equation model demonstrates acceptable fit indices ($\chi^2/df=2.34$, CFI=0.94, TLI=0.93, RMSEA=0.048, SRMR=0.052), supporting the validity of the extended TAM framework. Among the hypothesized determinants, perceived ease of use ($\beta=0.42$, $p<0.001$), trust in digital platforms ($\beta=0.38$, $p<0.001$), and social influence ($\beta=0.28$, $p<0.001$) emerged as the strongest predictors of adoption intention. Perceived usefulness showed a moderate positive effect ($\beta=0.24$, $p<0.01$), while perceived risk demonstrated the expected negative relationship ($\beta=-0.31$, $p<0.001$).

The model explains 68% of variance in adoption intention and 54% of variance in actual usage behavior. Country-level analysis reveals important contextual differences. In Kenya, where mobile money infrastructure is most developed, trust and perceived usefulness were primary drivers. In contrast, in Nigeria, where digital payment adoption is nascent, perceived ease of use and social influence played more prominent roles. These findings suggest that intervention strategies should be tailored to the developmental stage of digital payment ecosystems.

4.3. Financial inclusion outcomes

Panel regression analysis reveals significant positive relationships between digital payment usage and financial inclusion indicators. After controlling for demographic characteristics, income, and country fixed effects, intensive digital payment users (defined as above-median usage frequency) demonstrate 45% higher savings rates compared to non-users (coefficient=0.45, SE=0.08, $p<0.001$). Similarly, digital payment users show 32% greater likelihood of accessing formal credit (OR=1.32, 95% CI: 1.18-1.47, $p<0.001$) and 28% higher insurance product ownership (OR=1.28, 95% CI: 1.14-1.43, $p<0.001$).

The difference-in-differences analysis utilizing the COVID-19 pandemic as a natural experiment provides causal evidence for these relationships. Comparing high-adoption regions with low-adoption regions before and after the pandemic reveals a significant treatment effect on savings behavior (DID coefficient=0.23, SE=0.06, $p<0.001$), suggesting that accelerated digital payment adoption causally contributed to improved financial outcomes.

4.4. Consumer behavior transformation

Analysis of spending patterns reveals significant behavioral differences between digital payment users and non-users. Digital payment users demonstrate 67% more frequent transactions but with 34% lower average transaction values, indicating a shift toward micro-transactions for everyday purchases. E-commerce participation rates are substantially higher among digital payment users (58%) compared to non-users (23%), representing a 152% difference.

Financial management behaviors also show marked differences. Digital payment users are 2.3 times more likely to track expenses regularly, 1.8 times more likely to set savings goals, and 1.5 times more likely to use budgeting tools. These findings suggest that the digital record-keeping features of payment platforms contribute to improved financial awareness and planning behaviors.

V. CONCLUSION

This study provides comprehensive evidence on the impact of digital payment systems on consumer behavior and financial inclusion across emerging markets. The findings confirm that digital payment adoption is driven primarily by perceived ease of use, trust in platforms, and social influence, with these determinants explaining a substantial portion of adoption variance. More importantly, the results demonstrate significant positive relationships between digital payment usage and financial inclusion outcomes, including savings behavior, credit access, and insurance ownership.

The transformation in consumer behavior associated with digital payment adoption-characterized by more frequent transactions, increased e-commerce participation, and improved financial management practices-suggests that these technologies serve as catalysts for broader financial behavior change. The COVID-19 pandemic accelerated these trends, providing evidence of the adaptability and resilience that digital payment infrastructure offers during crisis periods.

These findings carry important implications for multiple stakeholders. Policymakers should prioritize investments in digital infrastructure and regulatory frameworks that promote trust and security in digital payment systems. Financial institutions should design products that leverage digital payment data to extend services to underserved populations. Future research should examine the long-term sustainability of these behavioral changes and explore the potential risks associated with increased reliance on digital financial services.

REFERENCES

Auer, R., Cornelli, G., & Frost, J. (2020). *COVID-19, cash and the future of payments*. BIS Bulletin, **3**, 1–7.

Björkegren, D., & Grissen, D. (2020). Behavior revealed in mobile phone usage predicts credit repayment. *The World Bank Economic Review, 34*(3), 618–634.

Chandra, S., Srivastava, S. C., & Theng, Y. L. (2010). Evaluating the role of trust in consumer adoption of mobile payment systems. *Communications of the Association for Information Systems, 27*(1), 561–588.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319–340.

Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2018). *The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution*. World Bank Publications.

Featherman, M. S., & Pavlou, P. A. (2003). Predicting e-services adoption: A perceived risk facets perspective. *International Journal of Human-Computer Studies, 59*(4), 451–474.

Ghosh, P., & Vallée, B. (2021). *Fintech lending: Financial inclusion, risk pricing, and alternative information* (Working paper). Harvard Business School.

Gomber, P., Koch, J. A., & Siering, M. (2017). Digital finance and FinTech: Current research and future research directions. *Journal of Business Economics, 87*(5), 537–580.

Jack, W., & Suri, T. (2014). Risk sharing and transactions costs: Evidence from Kenya's mobile money revolution. *American Economic Review, 104*(1), 183–223.

Kim, G., Shin, B., & Lee, H. G. (2010). Understanding dynamics between initial trust and usage intentions of mobile banking. *Information Systems Journal, 19*(3), 283–311.

Liébana-Cabanillas, F., Sánchez-Fernández, J., & Muñoz-Leiva, F. (2014). Antecedents of the adoption of the new mobile payment systems: The moderating effect of age. *Computers in Human Behavior, 35*, 464–478.

Mas, I., & Morawczynski, O. (2009). Designing mobile money services: Lessons from M-PESA. *Innovations: Technology, Governance, Globalization, 4*(2), 77–91.

McKnight, D. H., Choudhury, V., & Kacmar, C. (2002). Developing and validating trust measures for e-commerce. *Information Systems Research, 13*(3), 334–359.

Oliveira, T., Thomas, M., Baptista, G., & Campos, F. (2016). Mobile payment: Understanding the determinants of customer adoption and intention to recommend the technology. *Computers in Human Behavior, 61*, 404–414.

Prelec, D., & Simester, D. (2001). Always leave home without it: A further investigation of the credit-card effect on willingness to pay. *Marketing Letters, 12*(1), 5–12.

Sheth, J. (2020). Impact of COVID-19 on consumer behavior: Will the old habits return or die? *Journal of Business Research, 117*, 280–283.

Soman, D. (2003). The effect of payment transparency on consumption: Quasi-experiments from the field. *Marketing Letters, 14*(3), 173–183.

Suri, T., & Jack, W. (2016). The long-run poverty and gender impacts of mobile money. *Science, 354*(6317), 1288–1292.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 425–478.

Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly, 36*(1), 157–178.

World Bank. (2014). *Global financial development report 2014: Financial inclusion*. World Bank Publications.