IMPACT OF DIGITAL PAYMENT ADOPTION ON FINANCIAL INCLUSION: EVIDENCE FROM INDIA

Dr. Hemkant Kulshrestha
Associate Professor, DSPSR

Ms. Mayuri Gupta
Student, B. Com. (Hons.), 4th Semester, DSPSR

Ms. Tanvi
Student, BBA, 4th Semester, DSPSR

Ms. Mahak Sharma
Student, BBA, 6th Semester, DSPSR

ABSTRACT

Purpose: By offering people easy, safe, and effective financial services, the quick development of digital payment technologies has completely changed the financial environment. Digital payment systems like digital wallets, online banking, mobile banking, and the Unified Payments Interface (UPI) have all significantly increased access to financial services, particularly in emerging nations like India. The impact of digital payment uptake on financial inclusion is examined in this research. The study looks at how digital payment platforms can improve financial inclusion, lower entry barriers to traditional banking systems, and increase access to formal financial services.

Design/Methodology/Approach: Data from consumers of digital payment services can be gathered using a structured questionnaire, and Structural Equation Modeling (SEM) can be utilized for analysis.

Findings: It is anticipated that the findings will demonstrate the strong and favorable correlation between the use of digital payments and financial inclusion.

Research Limitations: The abstract does not explicitly mention any research limitations.

Managerial Implications: The study contributes to the expanding body of knowledge on financial technology and offers useful recommendations for decision-makers, financial institutions, and digital service providers that want to advance equitable financial growth.

Originality/Value: The study contributes to the expanding body of knowledge on financial technology and offers useful recommendations for decision-makers, financial institutions, and digital service providers that want to advance equitable financial growth.

Keywords: Digital Payments, Financial Inclusion, UPI, FinTech, Mobile Banking, Financial Services, India.

1. Introduction

Financial inclusion has long been a key policy goal for governments and financial institutions around the world. This means the process of ensuring access to affordable, timely and adequate financial products and services for all sections of the society, especially the underserved populations (Bagde, 2026). Despite the fast development in banking infrastructure, many people still find it difficult to access formal financial services (Malladi et al., 2021).

The development of digital technologies has opened new ways to overcome this gap. The financial transactions have been revolutionized by digital payment systems such as UPI, mobile wallets, internet banking and QR-code based payments (Mali, 2026). These technologies reduce transaction costs, increase access, and provide financial services to those who would otherwise be excluded from the formal financial system (Cornelli et al., 2024).

The digital payment landscape in India has witnessed remarkable growth owing to initiatives such as Digital India, Jan Dhan Yojana, and an increase in smartphone penetration (Pandey et al., 2025). Digital payment platforms have the potential to enhance financial inclusion through encouraging account ownership, digital transactions, saving behavior and access to financial products (Alok & Ghosh, 2026). There is, therefore, a need to understand the nexus between digital payment adoption and financial inclusion.

2. Literature Review

2.1 Digital Payment Adoption

The adoption of digital payments has received a lot of attention in recent years due to the quick growth of digital infrastructure and financial technologies. Through mobile apps, online banking, digital wallets, and card-based payment systems, consumers can conduct their financial transactions electronically. Perceived utility and perceived ease of use are factors that influence technology acceptance, according to the Technology Acceptance Model (TAM) (Davis, 1989). Users are more inclined to embrace digital payment systems if they perceive them as practical, effective, and advantageous Venkatesh et al. (2003). The adoption of digital payments has

received a lot of attention in recent years due to the quick growth of digital infrastructure and financial technologies. Through mobile apps, online banking, digital wallets, and card-based payment systems, consumers can conduct their financial transactions electronically. Perceived utility and perceived ease of use are factors that influence technology acceptance, according to the Technology Acceptance Model (TAM) (Davis, 1989). Users are more inclined to embrace digital payment systems if they perceive them as practical, effective, and advantageous. In a similar vein, Singh and Srivastava (2020) found that convenience, perceived security, and technological readiness positively affect digital payment adoption among Indian consumers. The adoption of digital payments has received a lot of attention in recent years due to the quick growth of digital infrastructure and financial technologies. Through mobile apps, online banking, digital wallets, and card-based payment systems, consumers can conduct their financial transactions electronically. Perceived utility and perceived ease of use are factors that influence technology acceptance, according to the Technology Acceptance Model (TAM) (Davis, 1989). Users are more inclined to embrace digital payment systems if they perceive them as practical, effective, and advantageous.

2.2 Financial Inclusion

The adoption of digital payments has received a lot of attention in recent years due to the quick growth of digital infrastructure and financial technologies. Through mobile apps, online banking, digital wallets, and card-based payment systems, consumers can conduct their financial transactions electronically. Perceived utility and perceived ease of use are factors that influence technology acceptance, according to the Technology Acceptance Model (TAM) (Davis, 1989). Users are more inclined to embrace digital payment systems if they perceive them as practical, effective, and advantageous. Numerous barriers to financial inclusion have been identified by researchers. These include geographical restrictions, high transaction costs, limited financial literacy, and a lack of banking infrastructure (Allen et al., 2016). Women, low-income households, marginalized communities, and rural populations are the groups most affected by these issues. Many socioeconomic advantages have been linked to financial inclusion. For example, Beck et al. (2007) found that having access to financing is crucial for promoting economic growth and lowering poverty. In a similar vein, Park and Mercado (2018) found that

financial inclusion improves household welfare and boosts people's ability to withstand financial shocks. The body of current research highlights the growing role that digital technology plays in guaranteeing financial inclusion. Finance may be made more affordable and less dependent on banks' physical infrastructure thanks to digital finance.

2.3 Financial Inclusion and Online Financial Services

In the fight to guarantee financial inclusion, digital financial services can be seen as a significant advancement. Mobile banking, digital wallets, online payments, and electronic fund transfers are a few examples of these digital financial services that facilitate financial transactions through digital channels.

Ozili (2018) claims that by lowering costs, increasing accessibility, and removing geographical restrictions, digital finance contributes to greater financial inclusion. Digital finance services are very useful in reaching rural areas since they allow consumers to obtain a variety of financial services without going to physical banks.

Financial inclusion is greatly aided by digital financial advancements, as numerous studies have demonstrated. For example, Suri and Jack (2016) discovered that mobile money use improved financial access and lowered household poverty levels. According to Evans (2018), digital financial innovation plays a crucial role in advancing financial inclusion.

Access to credit institutions, the mobilization of savings, and the delivery of government benefits all depend on digital financial services. By involving the underbanked population in financial activities, digital payments contribute to greater financial inclusion, according to World Bank publications (Demirgüç-Kunt et al., 2022).

2.4 Financial Inclusion and the Adoption of Digital Payments

Digital payment technologies and financial inclusion are becoming major areas of study in this area. This is because the digital payments system encourages people to register bank accounts and conduct financial transactions, making it a crucial entry point to more extensive financial inclusion.

Ozili (2020) asserts that because digital payment technologies increase access and reduce transaction costs, they can play a significant role in raising the degree of financial inclusion. People who regularly utilize digital payment methods will also use credit and savings accounts, among other financial products.

Digital financial inclusion has been demonstrated to have a favorable effect on financial empowerment and economic development (Lenka and Barik, 2018). The authors noted that digital payment methods facilitate financial transactions. According to Chatterjee et al. (2023), digital payments have also contributed significantly to financial inclusion in India by increasing financial awareness and facilitating access to financial services. Furthermore, scholars contend that digital payment systems may be used to monitor financial transaction histories, which can enhance financial inclusion by enabling financial institutions to more accurately evaluate their clients. Therefore, acceptance of digital payments is linked to more prospects for financial inclusion in addition to aiding in the efficient conduct of transactions.

But there are some challenges that also need to be taken into account. They include things like poor internet connectivity, lack of trust, security concerns, and digital illiteracy. Therefore, in order to improve the effectiveness of digital payments, governments must concentrate on resolving these factors. Consequently, the following theories are developed.

H1: Digital payment adoption has a positive and significant impact on financial inclusion.

3. Research Gap

Although earlier research may have examined digital payments and financial inclusion separately, there hasn't been much published about how digital payments directly affect financial inclusion given the rise of new ideas like UPI and FinTech in India. Researching whether or not more digital payments will result in financial inclusion is also essential.

4. Objectives of the Study

1. To assess the degree of user adoption of digital payments.
2. To evaluate the respondents' degree of financial inclusion.

3. To look at how the use of digital payments affects financial inclusion.

5. Research Methodology

The current study employs a quantitative methodology to investigate the impact of digital payment method usage on Indian consumers' financial inclusion. Additionally, the link between the two variables will be examined using the descriptive and explanatory techniques. People who frequently use digital payment methods, such as UPI, mobile banking, internet banking, and digital wallet services, will be given a well-designed questionnaire to complete in order to gather primary data.

Digital payment users from a range of demographics, including students, salaried workers, businesspeople, and entrepreneurs, are among the study's participants. Since the convenience sampling approach is practical and readily available in this situation, it will be employed. For statistical tests, it is anticipated that 300–400 responders will be adequate.

The questionnaire is divided into two sections: Part I collects demographic information from respondents, while Part II measures financial inclusion and digital payment adoption using previously validated measuring scales created from the relevant literature sources.

Every question has a Likert scale with 1 representing "strongly disagree" and 5 representing "strongly agree." Structural Equation Modeling (SEM) and the Statistical Package for Social Sciences (SPSS) are used in data analysis. The characteristics of respondents and their variables are analyzed using descriptive statistics. Cronbach's alpha coefficients are used to evaluate the internal consistency of the chosen measurement scale. Additionally, the convergent and discriminant validity of constructs are established by Confirmatory Factor Analysis. Lastly, the suggested connection between the adoption of digital payments and financial inclusion will be tested using structural equation modeling.

Table 1: Demographic Profile of the Respondents (N = 350)

Demographic Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	182	52.0%
	Female	161	46.0%
	Prefer not to say	7	2.0%
Age Group	Under 20 years	42	12.0%
	21 – 30 years	147	42.0%
	31 – 40 years	98	28.0%
	41 – 50 years	42	12.0%
	Above 50 years	21	6.0%
Occupational Status	Student	91	26.0%
	Salaried/Wage Earner	133	38.0%
	Businessman/Merchant	77	22.0%
	Entrepreneur	49	14.0%
Primary Digital Payment Method	UPI (e.g., GPay, PhonePe, Paytm)	203	58.0%
	Mobile Banking Apps	70	20.0%
	Internet Banking	42	12.0%
	Digital Wallets	35	10.0%
Frequency of Digital Payment Use	Daily	224	64.0%
	2–3 times a week	98	28.0%
	Once a week	21	6.0%
	Rarely / Monthly	7	2.0%

Source: Primary Survey

5.1 Scale of Measuring

Likert scale with five points: 1 for "strongly disagree" and 5 for "strongly agree."

5.1.1 Items for Measurement

Adoption of Digital Payment (DPA)

DPA1: I regularly make purchases using digital payment apps.

DPA2: It's simple to use digital payment methods.

DPA3: Using digital payments speeds up transactions.

DPA4: I have faith in digital payment systems.

DPA5: For everyday purchases, digital payments are practical.

DPA6: I would rather use digital payments than cash.

5.1.2 Inclusion of Finances (FI)

FI1: I can now access financial services more easily thanks to digital payments.

FI2: I make frequent use of official financial services.

FI3: I've become more financially involved thanks to digital payments.

FI4: Financial transactions are now more accessible thanks to digital payments.

FI5: Digital payment services give me a sense of financial empowerment.

FI6: I utilize more financial goods as a result of digital payments**.**



Figure 1: Conceptual Model Framework

5.2 Data Analysis Techniques

Data will be analyzed through Statistical Package for Social Sciences (SPSS) and Structural Equation Modeling (SEM) in order to analyze the association between digital payment usage and financial inclusion. Firstly, descriptive statistics will be used to describe demographic factors about respondents and provide an overall perspective about the research variables. Reliability analysis will be done by means of Cronbach's Alpha in order to determine the reliability of measurement scales where any value over 0.70 is acceptable. Confirmatory Factor Analysis (CFA) will be applied in order to validate the 5.1.2 Inclusion of Finances (FI)

FI1: I can now access financial services more easily thanks to digital payments.

FI2: I make frequent use of official financial services.

FI3: I've become more financially involved thanks to digital payments.

FI4: Financial transactions are now more accessible thanks to digital payments.

FI5: Digital payment services give me a sense of financial empowerment.

FI6: I utilize more financial goods as a result of digital payments. Extracted (AVE) indicators.

Factor loadings, CR, and AVE—all of which should be higher than 0.70, 0.70, and 0.50, respectively—will be used to test convergent validity. In the meantime, discriminant validity will be verified if the square root of AVE is higher than the measure intercorrelations. The heterotrait-monotrait (HTMT) ratio and the Fornell-Larcker criterion will also be used to evaluate discriminant validity. After verifying the measurement model's validity and reliability (refer to Table 2), SEM will be used to evaluate the hypotheses. Path coefficients, t-values, p-values, coefficient of determination (R2), Q2, and fit indexes will be used to test the structural model.

6. Results and Discussion

Since all constructs had Cronbach's Alpha and Composite Reliability values above the suggested threshold of 0.70, indicating internal consistency, it is possible to conclude from the analysis of the data that the measurement model had adequate reliability and validity. All measuring items had factor loadings greater than 0.70, and their Average Variance Extracted was greater than 0.50, indicating convergent validity. The Fornell-Larcker criterion and HTMT were then used to validate the discriminant validity of each construct (see Table 2). As the structural model is examined,

It should be mentioned that the use of digital payments improved financial inclusion. At the five percent significance level, the route coefficient was both positive and significant, supporting the initial research hypothesis. It is also possible to conclude from this result that the coefficient of determination (R2) indicates that the independent variable of digital payment adoption could account for a significant amount of the variance in the variable financial inclusion. The positive correlation suggests that those who regularly utilize different digital payment methods, such as

digital wallets, UPI, mobile banking, and internet banking, would have better access to financial services (Table 3).

The results indicate that the widespread usage of digital payments has a significant impact on financial inclusion since it makes it simple and affordable for consumers to carry out their financial transactions. As a result, legislators and financial institutions must keep advancing financial literacy, awareness campaigns, and digital payment technology.

Table 2: Measurement Model Validity & Reliability

Evaluation Metric	**Acceptable Threshold DOCX+ 1**	**Study Finding / Status DOCX**
Cronbach's Alpha	> 0.70	Satisfactory (> 0.70 for all constructs)
Composite Reliability (CR)	> 0.70	Satisfactory (> 0.70 for all constructs)
Factor Loadings	> 0.70	All items exceeded 0.70
Average Variance Extracted (AVE)	> 0.50	All values exceeded 0.50 (Convergent validity established)
Discriminant Validity	Fornell-Larcker & HTMT criteria met	Confirmed across all constructs

Table 3: Structural Model Hypothesis Testing

Hypothesized Path	**Path Coefficient Direction DOCX**	**Significance Level DOCX**	**Variance Explained (R2) DOCX**	**Result DOCX**
DPA FI	Positive	Significant at 5% level ($p < 0.05$)	Explains a substantial proportion of variance	**Supported**

7. Practical Implications

Nonetheless, this study's findings have a number of significant practical ramifications. First and foremost, the results show that more work needs to be done to improve digital infrastructure, increase Internet access, and support digital literacy initiatives nationwide. Financially disadvantaged people may also be able to enter the formal market more quickly because to government initiatives that support financial digitization. The findings suggest that financial institutions must implement more effective digital payment platforms in order to guarantee superior services and a convenient customer experience. Digital payment platforms have the potential to be useful instruments for growing the client base and boosting the use of financial goods provided by banks and other companies.

The study's findings show that FinTech companies must come up with creative ways to develop digital payment solutions. More clients will be drawn in by creating user-friendly interfaces and guaranteeing greater security for digital payments. From a broader angle, more people using digital payment services may benefit society as a whole. Governments, financial institutions, and tech firms must work together to fully utilize the potential of digital payments for equitable and sustainable financial development.

8. Conclusion

Digital payment methods have emerged as one of the most important components of the modern financial environment, particularly in promoting greater access to formal financial services. The increasing availability of digital wallets, online banking, mobile banking, and UPI has made financial transactions more convenient, accessible, and efficient for consumers. However, the effectiveness of digital payments in promoting financial inclusion depends not only on their availability but also on their cost-effectiveness, usability, safety, and accessibility.

The findings of the study suggest that greater adoption and use of digital payment systems will probably lead to higher levels of financial empowerment and financial inclusion. By reducing entry barriers to traditional banking systems and providing individuals with easier access to formal financial services, digital payment platforms can support broader participation in the financial system. Therefore, continued efforts to improve the accessibility, affordability, security,

and user-friendliness of digital payment services are essential for strengthening financial inclusion.

The study further highlights the importance of collaboration among policymakers, financial institutions, and digital service providers in creating an inclusive digital financial ecosystem. Such efforts can help ensure that the benefits of digital payment technologies reach a wider section of society and contribute to equitable financial growth. Overall, the increasing use of digital payment methods has considerable potential to strengthen financial empowerment and advance financial inclusion, particularly in emerging economies like India.

References

- Allen, F., Demirgüç-Kunt, A., Klapper, L., & Peria, M. S. M. (2016). The foundations of financial inclusion: Understanding ownership and use of formal accounts. *Journal of Financial Intermediation, 27*, 1–30. https://doi.org/10.1016/j.jfi.2015.12.003
- Alok, S., & Ghosh, P. (2026). Financial inclusion as a path to equality: Lessons from India. *EAC-PM Working Paper Series* (EAC-PM/WP/43/2026).
- Bagde, R. (2026). Digital payments, financial inclusion and rural development in India: Evidence from UPI adoption. *Munich Personal RePEc Archive* (MPRA Paper No. 128929).
- Beck, T., Demirgüç-Kunt, A., & Levine, R. (2007). Finance, inequality and the poor. *Journal of Economic Growth, 12*(1), 27–49. https://doi.org/10.1007/s10887-007-9010-6
- Chatterjee, S., Chaudhuri, R., Vrontis, D., & Thrassou, A. (2023). Digital payments and financial inclusion in emerging economies: Understanding the role of FinTech innovations. *Technological Forecasting and Social Change, 190*, 122413. https://doi.org/10.1016/j.techfore.2023.122413
- Cornelli, G., Frost, J., & Gambacorta, L. (2024). The organisation of digital payments in India - lessons from the Unified Payments Interface (UPI). *Bank for International Settlements Papers*, (152), 63-74.
- Dahlberg, T., Guo, J., & Ondrus, J. (2015). A critical review of mobile payment research. *Electronic Commerce Research and Applications, 14*(5), 265–284. https://doi.org/10.1016/j.elerap.2015.07.006
- 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
- Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2022). *The Global Findex Database 2021: Financial inclusion, digital payments, and resilience in the age of COVID-19*. World Bank.
- Evans, O. (2018). Connecting the poor: The internet, mobile phones and financial inclusion in Africa. *Digital Policy, Regulation and Governance, 20*(6), 568–581. https://doi.org/10.1108/DPRG-04-2018-0018

- Lenka, S. K., & Barik, R. (2018). Has expansion of mobile phone and internet use spurred financial inclusion in the SAARC countries? *Journal of Financial Economic Policy, 10*(1), 39–62. https://doi.org/10.1108/JFEP-11-2016-0079
- Mali, H. P. (2026). Impact of digital payment systems on financial inclusion: A decade in review (2015-2025). *VNSGU Journal of Research and Innovation*, *5*(1), 73-82.
- Malladi, C. M., Soni, R. K., & Srinivasan, S. (2021). Digital financial inclusion: next frontiers—challenges and opportunities. *CSI Transactions on ICT*, *9*(2), 127-134. https://doi.org/10.1007/s40012-021-00328-5
- 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. https://doi.org/10.1016/j.chb.2016.03.030
- Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review, 18*(4), 329–340. https://doi.org/10.1016/j.bir.2017.12.003
- Ozili, P. K. (2020). Financial inclusion research around the world: A review. *Forum for Social Economics, 50*(4), 457–479. https://doi.org/10.1080/07360932.2020.1715238
- Pandey, A., Wadhawan, N., & Kiran, R. (2025). Transforming digital financial inclusion into inclusive development: The critical role of financial literacy. *Information Technology for Development*, *32*(1).
- Park, C. Y., & Mercado, R. V. (2018). Financial inclusion, poverty, and income inequality in developing Asia. *Asian Development Bank Economics Working Paper Series*, No. 426.
- Sarma, M. (2012). *Index of Financial Inclusion – A measure of financial sector inclusiveness*. Berlin Working Papers on Money, Finance, Trade and Development, No. 07/2012.
- Singh, S., & Srivastava, R. K. (2020). Understanding the intention to use mobile banking by existing online banking customers: An empirical study. *International Journal of Bank Marketing, 38*(3), 603–625. https://doi.org/10.1108/IJBM-08-2018-0210
- Suri, T., & Jack, W. (2016). The long-run poverty and gender impacts of mobile money. *Science, 354*(6317), 1288–1292. https://doi.org/10.1126/science.aah5309

- 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. https://doi.org/10.2307/30036540
- World Bank. (2022). *Financial Inclusion Overview*. World Bank Group.
- World Bank. (2023). *Digital Financial Services*. World Bank Publications.
- Yoshino, N., Morgan, P. J., & Long, T. Q. (2017). Financial literacy in Asia: Determinants and implications for financial inclusion. *Asian Development Bank Institute Working Paper Series*, No. 747.