

From Adoption to Outcomes: Assessing the Impact of Digital Payment Systems on Financial Inclusion and Financial Well-being in India

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ABSTRACT

Purpose - This study seeks to develop and empirically validate an integrated framework to explain digital payment adoption by extending the Unified Theory of Acceptance and Use of Technology (UTAUT3) with a multidimensional conceptualisation of perceived risk. While technology acceptance models have been widely applied to predict behavioural intention, they often underrepresent the complex risk considerations inherent in digital financial environments.

Design / Purpose / Methodology - A quantitative research design was adopted to empirically test the proposed integrated framework. Primary data were collected through a structured questionnaire administered to 561 digital payment users in India's National Capital Region. The measurement instrument incorporated validated scales for UTAUT3 constructs and multidimensional perceived risk dimensions. The data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) to evaluate the measurement model's reliability and validity, and to examine the hypothesised structural relationships among the constructs.

Findings - The results confirm that behavioural intention serves as a strong predictor of digital payment usage behaviour. Performance expectancy, habit, and facilitating conditions significantly enhance adoption intention, while perceived risk, particularly financial, security, and privacy concerns acts as a substantial barrier. The integration of risk dimensions meaningfully improves the model's predictive capability, underscoring the importance of considering both motivational and deterrent factors in technology adoption research within digital financial contexts.

Research Limitations / Implications - This study is subject to certain limitations. The cross-sectional research design restricts causal inference and does not capture changes in user perceptions over time. Future research may adopt longitudinal or multi-group designs to examine dynamic adoption behaviour and explore contextual variations across different digital financial ecosystems.

Originality / Value - This study contributes to the technology adoption literature by extending UTAUT3 by integrating multidimensional perceived risk within a unified structural framework. Unlike prior research that treats risk as a singular construct, this study conceptualises risk as a set of distinct yet interrelated dimensions influencing behavioural intention...

Keywords: UTAUT3; Perceived Risk; Digital Payment Adoption; Financial Inclusion, Financial Well-being

INTRODUCTION:

The emergence of digital technologies has brought significant transformation across various sectors of the global economy, particularly in the financial services industry. The rapid advancement of information and communication technology, increasing internet penetration, smartphone accessibility, and the growth of fintech innovations have revolutionized the way financial transactions are conducted worldwide (Sanderson et al., 2018). Traditional cash-based payment mechanisms are gradually being replaced by faster, more convenient, secure, and technology-enabled digital payment systems. As economies move toward digitalization, digital payment systems have become an essential component of modern financial infrastructure, facilitating seamless financial transactions and promoting greater economic efficiency. Digital payment systems refer to electronic modes of transferring money and conducting financial transactions without the direct use of physical cash. These

systems include internet banking, mobile banking, debit and credit cards, digital wallets, QR-code payments, Unified Payments Interface (UPI), Immediate Payment Service (IMPS), National Electronic Funds Transfer (NEFT), and other fintech-enabled payment platforms (Rastogi et al., 2021). Digital payments have transformed consumer behaviour by providing speed, accessibility, transparency, convenience, and round-the-clock financial services. In recent years, digital payment systems have gained substantial importance not only as transactional tools but also as instruments for promoting financial inclusion, economic participation, and digital empowerment. India has emerged as one of the fastest-growing digital payment markets in the world. The digital payment ecosystem in India has witnessed unprecedented growth due to supportive government initiatives, technological innovation, and increasing public awareness regarding digital financial services. Programs such as Digital India, Jan Dhan Yojana, Aadhaar integration, demonetization, and the promotion of cashless

transactions have accelerated the adoption of digital payment systems across the country (Sahi et al., 2021). Among various digital payment innovations, the introduction and expansion of the Unified Payments Interface (UPI) (Neema & Neema, 2016) by the National Payments Corporation of India (NPCI) has significantly transformed the Indian payment landscape (Vermani & Arora, 2025).

UPI has enabled real-time, secure, low-cost, and user-friendly transactions, thereby encouraging individuals, businesses, and merchants to adopt digital payment methods in their daily financial activities. The growing use of smartphones and affordable internet services has further contributed to the rapid penetration of digital payment systems among diverse sections of society. Consumers increasingly prefer digital modes of payment for activities such as online shopping, utility bill payments, fund transfers, ticket booking, educational payments, healthcare services, and retail transactions. The COVID-19 pandemic further accelerated the acceptance of contactless and cashless payment methods, leading to a behavioural shift toward digital financial transactions. Consequently, digital payment systems have become an important driver of India's digital economy and financial modernization. Despite the remarkable growth and acceptance of digital payment systems, several challenges continue to affect their widespread adoption and usage (Sambeka & Kom, 2025). Consumers often face concerns related to security, privacy, financial fraud, technological complexity, transaction failures, lack of trust, and perceived risks (Petroccione et al., 2025) associated with digital transactions. Behavioural and psychological factors (Ghosh, 2021) also influence users' intentions to adopt and continuously use digital payment platforms. Therefore, understanding the determinants influencing digital payment adoption has become an important area of research for academicians, policymakers, financial institutions, and fintech service providers. Various theoretical models have been developed to explain technology adoption behaviour. Among these, UTAUT3 provides a comprehensive framework for understanding individuals' behavioural intentions and usage behaviour toward technology-based systems. The theory emphasizes important factors such as Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Hedonic Motivation, Price Value, and Habit in shaping users' adoption decisions. However, in the context of financial technologies and digital payment systems, users' perceptions regarding risk and security also play a significant role. Therefore, the present study integrates the dimensions of Perceived Risk Theory with UTAUT3 to develop a more comprehensive framework for analyzing digital payment adoption behaviour.

Concept and Evolution of Digital Payment Platforms: UPI as a Key Innovation

Digital payment platforms refer to technology-enabled systems that facilitate electronic financial transactions without the direct use of physical cash. These platforms enable individuals, businesses, and institutions to transfer funds, make payments, receive money, and access financial services through digital channels such as mobile applications, internet banking, payment gateways, cards,

and electronic wallets (Yang et al., 2021). The growing integration of digital technologies into financial services has transformed the traditional payment ecosystem and contributed significantly to the development of a digitally connected economy. Over the years, digital payment platforms have evolved from basic electronic banking services to advanced, real-time, and interoperable financial systems. Initially, digital transactions in India were primarily limited to services such as Automated Teller Machines (ATMs), debit and credit cards, internet banking, and electronic fund transfer systems including National Electronic Funds Transfer (NEFT) and Real Time Gross Settlement (RTGS) (Nitsure, 2003). Although these systems improved transaction efficiency and reduced dependency on physical cash, their accessibility and convenience were comparatively limited due to procedural complexities and infrastructural constraints. The advancement of mobile technology, internet penetration, and fintech innovation led to the emergence of more user-friendly digital payment solutions such as mobile banking applications and digital wallets. Platforms such as Paytm, Mobikwik, Freecharge, and other wallet-based systems gained popularity by enabling users to perform quick digital transactions through smartphones. These platforms encouraged greater consumer participation in digital financial activities by offering convenience, speed, cashback incentives, and simplified payment processes. A significant transformation in the Indian digital payment ecosystem occurred with the establishment of the National Payments Corporation of India (NPCI), which introduced several innovative payment mechanisms aimed at improving financial interoperability and accessibility. Among these innovations, the launch of the Unified Payments Interface (UPI) in 2016 emerged as a revolutionary development in India's payment landscape (George et al., 2023). UPI is a real-time payment system that enables users to instantly transfer money between bank accounts through mobile applications using a Virtual Payment Address (VPA), mobile number, or QR code without requiring detailed bank account information. UPI has fundamentally transformed the digital payment ecosystem by offering a secure, seamless, interoperable, and cost-effective payment mechanism. Unlike traditional digital payment systems, UPI integrates multiple bank accounts into a single mobile platform and enables round-the-clock transactions with immediate settlement. The simplicity and convenience associated with UPI transactions have contributed significantly to its widespread adoption among consumers, merchants, businesses, and financial institutions. The introduction of applications such as BHIM, Google Pay, PhonePe, and Paytm UPI further accelerated the growth and acceptance of UPI-based transactions across the country.

The interoperability feature of UPI has enabled users to conduct transactions across different banks and payment service providers without technical barriers. Additionally, QR-code-based payments and merchant integration have expanded the usage of UPI among small businesses (Najib & Fahma, 2020), retailers, street vendors (Ligon et al., 2019), and service providers, thereby promoting greater digital financial participation. The demonetization initiative of 2016 acted as an important catalyst in

accelerating the adoption of UPI and digital payment platforms in India. During this period, consumers and businesses increasingly shifted toward digital transaction methods due to cash shortages and growing awareness regarding cashless payments. Subsequently, the COVID-19 pandemic further strengthened the preference for contactless and digital payment systems, resulting in a substantial increase in UPI transaction volumes and user adoption. The rapid success of UPI has positioned India as one of the leading digital payment economies globally. UPI has not only transformed transaction behaviour but has also contributed toward enhancing financial accessibility, promoting digital inclusion, and encouraging formal financial participation. Its low transaction cost, ease of use, interoperability, and widespread acceptance have made it one of the most preferred digital payment systems in India. Despite its remarkable growth, digital payment platforms, including UPI, continue to face certain challenges such as cybersecurity concerns, digital fraud, privacy issues, technological barriers, and varying levels of digital literacy among users. Nevertheless, the continuous innovation (Silber, 1983) within the fintech ecosystem and the supportive role of regulatory authorities have strengthened the digital payment infrastructure in India. The evolution of digital payment platforms, particularly the emergence of UPI as a key financial innovation, reflects the growing digital transformation of the Indian economy. UPI has emerged not merely as a payment mechanism but as a significant driver of financial inclusion, digital empowerment, and economic modernization (Gibson et al., 2024). Consequently, understanding consumer adoption behaviour toward digital payment platforms has become increasingly important in evaluating their broader impact on financial inclusion and financial well-being within the Indian context.

Literature Review

The Indian financial system has undergone a remarkable transformation over the past few decades with the rapid advancement of digital technologies and financial innovations. Traditionally, the Indian economy was predominantly cash-oriented, where financial transactions were mainly conducted through physical currency and conventional banking methods. However, with the development of information and communication technology, increasing internet penetration, and the growing use of smartphones, India has gradually moved toward a digitally driven financial ecosystem (Vermani & Arora, 2025). The emergence of digital payment systems has significantly altered the manner in which individuals, businesses, and institutions conduct financial transactions, thereby contributing to greater efficiency, transparency, accessibility, and financial connectivity (Susanto et al., 2022). The evolution of digital payment systems in India can be traced back to the introduction of electronic banking services and core banking solutions during the early phases of banking modernization. The banking sector gradually adopted electronic fund transfer mechanisms such as Electronic Clearing Service (ECS), National Electronic Funds Transfer (NEFT), Real Time Gross Settlement (RTGS), and Immediate Payment

Service (IMPS) to facilitate faster and more secure financial transactions. These initiatives marked the initial transition from traditional banking practices toward electronic financial systems. The establishment of the National Payments Corporation of India (NPCI) in 2008 played a transformative role in strengthening the digital payment infrastructure of the country. NPCI introduced several innovative payment platforms aimed at enhancing the efficiency, accessibility, and interoperability of financial transactions. Among these innovations, the introduction of the Immediate Payment Service (IMPS) significantly improved real-time fund transfer capabilities within the banking system. Subsequently, the launch of the Unified Payments Interface (UPI) revolutionized the Indian digital payment ecosystem by enabling instant, seamless, and interoperable transactions through mobile devices. The Government of India and the Reserve Bank of India (RBI) have also played a crucial role in promoting digital payments and financial digitization. Various initiatives such as Digital India, Jan Dhan Yojana, Aadhaar integration, Direct Benefit Transfer (DBT), and financial literacy programs have contributed significantly toward expanding digital financial inclusion (Jadoon et al., 2025) across the country. These initiatives aimed not only at increasing access to formal financial services but also at encouraging individuals to adopt secure and efficient digital payment methods. A major turning point in the growth of digital payments in India occurred after the demonetization initiative introduced in November 2016. The demonetization of high-value currency notes accelerated the adoption of digital payment systems as consumers and businesses increasingly shifted toward cashless modes of transactions. During this period, the usage of mobile wallets, internet banking, debit cards, QR-code payments, and UPI-based applications witnessed substantial growth. Digital payment platforms such as PhonePe, Google Pay, Paytm, and BHIM gained widespread acceptance among users due to their convenience and ease of use.

The introduction and rapid expansion of UPI have emerged as one of the most significant developments in the Indian digital payment landscape. UPI has transformed digital transactions by enabling users to transfer funds instantly between bank accounts using mobile applications without requiring complex banking details. The simplicity, speed, interoperability, and cost-effectiveness of UPI have made it one of the most preferred digital payment methods among consumers, merchants, and businesses. Over the years, UPI transaction volumes and values have increased exponentially, reflecting the growing acceptance of digital financial services among diverse sections of society. The rapid penetration of smartphones and affordable internet services has further accelerated the growth of digital payments in India. The availability of low-cost mobile data and the expansion of digital infrastructure have enabled individuals from urban as well as semi-urban areas to access digital financial services more conveniently. Consumers increasingly use digital payment systems for online shopping, utility bill payments, ticket bookings, peer-to-peer fund transfers, educational payments, healthcare transactions, and retail purchases. The integration of fintech innovations with

banking services has also enhanced customer experience by offering faster, more personalized, and user-friendly financial solutions. The COVID-19 pandemic further strengthened the adoption of digital payment systems in India. During the pandemic, concerns regarding physical contact and health safety encouraged consumers and businesses to prefer contactless and cashless payment methods. As a result, the use of QR-code payments, mobile wallets, internet banking, and UPI transactions increased substantially. The pandemic accelerated the behavioural shift toward digital financial transactions and reinforced the importance of digital payment systems in ensuring uninterrupted financial activities during periods of economic disruption. Despite the remarkable growth of digital payments in India, several challenges continue to affect their widespread adoption and usage (Trivedi & Sanchiher, 2023). Issues related to cybersecurity threats, financial fraud, privacy concerns, technological barriers, digital illiteracy, internet accessibility, and perceived risks remain important concerns among users. In addition, behavioural resistance and lack of trust in digital financial systems may also influence consumers' willingness to adopt digital payment platforms. Therefore, understanding the factors that influence digital payment adoption and usage has become increasingly important for policymakers, financial institutions, fintech companies, and researchers. At present, India is recognized as one of the world's leading digital payment markets, driven largely by the success of UPI and the continuous expansion of fintech innovations. The digital payment ecosystem has not only transformed transaction behaviour but has also contributed toward promoting financial inclusion (Ozili, 2021), economic participation, and digital empowerment. Digital payment systems are increasingly viewed as important instruments for enhancing access to financial services, integrating individuals into the formal financial system, and improving overall financial well-being (Mahdzan et al., 2023). Consequently, the study of digital payment adoption has gained significant relevance in understanding the broader socio-economic transformation occurring within the Indian digital economy.

Significance of the Study

The present study is significant from academic, practical, and policy perspectives as it examines the adoption of Digital Payment Systems and their impact on Financial Inclusion and Financial Well-being within the rapidly evolving digital financial ecosystem of India. With the increasing shift toward a cashless economy and technology-driven financial services, understanding consumer behaviour toward digital payment adoption has become highly relevant for researchers, policymakers, financial institutions, and fintech organizations. From an academic perspective, the study contributes to the existing body of knowledge by developing an integrated framework based on UTAUT3 and Perceived Risk Theory to examine the factors influencing Digital Payment System adoption. The study extends existing literature by incorporating behavioural, technological, and perceived risk dimensions within a single empirical framework. In addition, the research contributes to the growing literature on digital finance and fintech adoption by examining the

relationship between Digital Payment System adoption, Financial Inclusion, and Financial Well-being (Fernandez & GA, 2024). The study is also important because it provides updated empirical evidence within the context of the rapidly expanding UPI-led digital payment ecosystem in India. As digital financial technologies continue to evolve, there is a growing need for contemporary research that reflects changing consumer behaviour, fintech innovations, and digital transaction patterns. The study addresses this need by focusing on the National Capital Region (NCR), which represents one of the most digitally connected and economically active regions in the country. From a practical perspective, the findings of the study may help financial institutions, fintech companies, digital payment service providers, and technology developers understand the major factors influencing consumers' adoption behaviour toward digital payment systems. The insights derived from the research may support the development of more secure, accessible, user-friendly, and consumer-centric digital payment platforms. The study may also help organizations identify and address concerns related to perceived risks, security issues, and technological barriers associated with digital financial transactions. The study further holds policy significance as Financial Inclusion has emerged as an important developmental objective in India. Digital payment systems are increasingly recognized as effective tools for promoting accessible and inclusive financial services (Sharma & Pais, 2011). The findings of the research may assist policymakers and regulatory authorities in formulating strategies and initiatives aimed at strengthening digital financial participation, improving financial accessibility, enhancing cybersecurity awareness, and promoting responsible digital financial behaviour among users. Another important contribution of the study lies in its focus on Financial Well-being, which has become an important indicator of financial stability, confidence, and economic empowerment. By examining how Digital Payment System adoption influences individuals' financial experiences and financial participation, the study provides insights into the broader socio-economic implications of digital financial transformation. Overall, the present study is significant because it not only examines the determinants influencing Digital Payment System adoption but also evaluates the broader role of digital financial technologies in promoting Financial Inclusion, enhancing Financial Well-being, and supporting India's transition toward a digitally empowered economy.

Statement of the Problem

The rapid growth of digital technologies has transformed the financial services sector across the world, leading to the increased adoption of digital payment systems in both developed and developing economies. In India, digital payment systems have witnessed remarkable expansion due to supportive government initiatives, technological advancements, increasing smartphone penetration, internet accessibility, and the rapid growth of fintech innovations. The introduction of the Unified Payments Interface (UPI) has further accelerated the shift toward a less-cash economy by enabling fast, convenient, and

interoperable financial transactions. As a result, digital payment systems have become an important component of India's digital economy and financial infrastructure. Despite the substantial growth in digital payment transactions and the increasing popularity of digital payment platforms, the adoption and usage behaviour of consumers remain inconsistent across different sections of society. While many users actively utilize digital payment systems due to convenience, speed, and accessibility, a significant number of individuals continue to face hesitation and resistance toward adopting digital financial technologies. Concerns related to privacy, security, financial fraud, technological complexity, transaction failures, lack of trust, and perceived risks continue to influence users' behavioural intentions and actual usage behaviour. In addition, differences in digital literacy, awareness, socio-economic background, and technological readiness also affect the acceptance and continued usage of digital payment systems. Existing studies on digital payment adoption have primarily focused on behavioural intention and technology acceptance factors. However, limited research has attempted to integrate behavioural, technological, and perceived risk dimensions into a comprehensive framework for explaining digital payment adoption behaviour in the Indian context. Although theories such as UTAUT3 provide a strong foundation for understanding technology adoption behaviour, the role of perceived risk dimensions remains highly significant in the context of digital financial transactions. Therefore, there is a need to develop an integrated framework that simultaneously examines behavioural drivers and risk-related concerns associated with digital payment adoption. Furthermore, most previous studies have concentrated mainly on adoption intention and usage behaviour without adequately examining the broader socio-economic outcomes of digital payment adoption. In particular, limited empirical research has explored how the adoption of digital payment systems contributes toward financial inclusion and financial well-being among users. Financial inclusion has become an important policy objective in India, aiming to ensure access to affordable and accessible financial services for all sections of society. Similarly, financial well-being has emerged as a critical indicator of individuals' financial security, financial confidence, and overall quality of life. Since digital payment systems have the potential to improve access to financial services, increase financial participation, and enhance transaction efficiency, it becomes essential to examine their impact on financial inclusion and well-being. In addition, the rapidly evolving UPI-led digital ecosystem has significantly changed consumer financial behaviour, creating a need for updated empirical studies that reflect current trends in digital payment adoption. The National Capital Region (NCR), being one of the most economically active and digitally connected regions in India, provides an appropriate setting for investigating consumer behaviour toward digital payment systems. However, limited studies have comprehensively examined digital payment adoption behaviour and its implications for financial inclusion and financial well-being within the NCR context. Therefore, the present study attempts to address these research gaps by developing and empirically

validating an integrated framework based on UTAUT3 and Perceived Risk Theory to assess the factors influencing the adoption of digital payment systems and to examine their impact on financial inclusion and financial well-being. The study seeks to provide a comprehensive understanding of consumer adoption behaviour toward digital payment systems while offering valuable insights for policymakers, financial institutions, fintech companies, and digital payment service providers in promoting secure, inclusive, and sustainable digital financial ecosystems.

Financial Inclusion

Financial inclusion refers to the process of ensuring access to affordable, timely, and adequate financial services for all sections of society, particularly the economically weaker and underserved population groups. It involves providing individuals and businesses with access to formal financial services such as savings accounts, credit facilities, insurance services, remittance systems, and digital payment mechanisms through regulated financial institutions. Financial inclusion is considered an essential component of inclusive economic growth and sustainable development because it enables individuals to participate effectively in economic activities and improve their overall financial security and quality of life. Traditionally, a significant portion of the population in developing countries remained excluded from formal financial systems due to factors such as low income, lack of banking infrastructure, geographical barriers, limited financial awareness, and socio-economic inequalities. In India, financial exclusion was particularly prominent among rural populations, low-income groups, small businesses, women, and economically marginalized communities. The absence of accessible financial services restricted individuals' ability to save securely, obtain formal credit, manage financial risks, and participate in organized economic activities. Recognizing the importance of inclusive financial development, the Government of India and the Reserve Bank of India (RBI) have undertaken several initiatives to promote financial inclusion across the country. Programs such as Pradhan Mantri Jan Dhan Yojana (PMJDY), Aadhaar-enabled services, Direct Benefit Transfer (DBT), financial literacy campaigns, and digital banking initiatives have significantly expanded access to formal financial services. These initiatives aim to integrate individuals into the formal financial system by improving banking accessibility, encouraging savings behaviour, and facilitating digital financial participation. The advancement of financial technology and digital payment systems has further accelerated the process of financial inclusion in India. Digital financial services have reduced geographical and operational barriers (Widayani et al., 2022) by enabling individuals to access financial services through mobile phones, internet banking platforms, and digital payment applications. The growing use of smartphones, affordable internet connectivity, and fintech innovations has enabled individuals from both urban and semi-urban areas to conduct financial transactions more conveniently and efficiently. Among various digital financial innovations, the Unified Payments Interface (UPI) has emerged as an important instrument for

promoting financial inclusion. UPI-based payment systems allow users to transfer funds, make payments, and access financial services instantly through mobile applications without requiring complex banking procedures.

The simplicity, accessibility, and low transaction cost associated with UPI have encouraged greater participation in digital financial activities among consumers, merchants, and small businesses. QR-code-based payments and merchant integration have further expanded the acceptance of digital transactions across diverse sectors of the economy. Digital payment systems contribute to financial inclusion by improving access to formal financial services, reducing dependency on cash transactions, and facilitating greater financial participation. Individuals who were previously excluded from traditional banking systems can now perform digital transactions, receive government benefits, pay utility bills, transfer funds, and engage in financial activities through mobile-based platforms. In addition, digital financial records generated through electronic transactions may improve individuals' financial credibility and access to formal credit facilities. Financial inclusion also plays a significant role in promoting economic empowerment and social development. Access to financial services enables individuals to manage financial resources more effectively, develop saving habits (Sharma et al., 2026), invest in productive activities, and reduce vulnerability to financial shocks. Inclusive financial systems contribute toward poverty reduction, employment generation, entrepreneurship development, and economic stability by encouraging broader participation in formal economic activities. Despite considerable progress in financial inclusion, several challenges continue to affect its effective implementation and accessibility. Factors such as digital illiteracy (Muat et al., 2025), lack of awareness, inadequate digital infrastructure, cybersecurity concerns, internet accessibility issues, and socio-economic disparities continue to limit the adoption of digital financial services among certain sections of society. In addition, behavioural resistance, lack of trust in digital platforms, and limited technological readiness may also hinder inclusive participation in digital financial ecosystems. In recent years, financial inclusion has gained increasing importance within the context of digital transformation and fintech development. Policymakers, financial institutions, and fintech organizations continue to focus on developing secure, accessible, and user-friendly financial solutions that promote inclusive financial participation. As digital payment systems continue to expand, their role in enhancing financial inclusion and connecting individuals with formal financial systems is expected to become increasingly significant. Overall, financial inclusion is not only a financial objective but also an important socio-economic development goal that contributes toward economic equality, financial empowerment, and sustainable growth. The increasing adoption of digital payment systems, particularly within the UPI ecosystem, has created new opportunities for strengthening financial inclusion and promoting broader participation in India's digital economy.

Financial Well-being

Financial well-being refers to an individual's ability to effectively manage financial resources, meet present and future financial obligations, and maintain a sense of financial security and stability. It reflects the overall financial condition of individuals in terms of their capacity to manage day-to-day expenses, handle unexpected financial situations, achieve financial goals, and maintain confidence regarding their financial future. Financial well-being is increasingly recognized as an important dimension of individual welfare and quality of life because financial conditions significantly influence personal satisfaction, mental peace, economic security, and overall well-being. The concept of financial well-being extends beyond income generation and focuses on individuals' financial behaviour, financial confidence, financial control, and financial resilience. Individuals with higher financial well-being are generally better able to manage expenses, plan savings, avoid excessive financial stress, and make informed financial decisions. On the other hand, poor financial management, financial insecurity, debt burden, and lack of access to financial resources may negatively affect individuals' economic stability and psychological well-being. In recent years, financial well-being has gained increasing importance among researchers, policymakers, financial institutions, and regulatory authorities due to the growing complexity of financial systems and changing consumer financial behaviour. The rapid digitalization of financial services, emergence of fintech innovations, and expansion of digital payment systems have transformed the manner in which individuals interact with financial products and services. As a result, understanding the relationship between digital financial technologies and financial well-being has become an important area of academic and practical interest. Financial well-being (Manda et al., 2024) is influenced by several factors such as income level, financial literacy (Bhat et al., 2025), saving behaviour, financial planning, accessibility to financial services, technological readiness, and financial decision-making ability. Access to secure and convenient financial services enables individuals to manage financial activities more efficiently and develop greater financial confidence. In this context, digital payment systems have emerged as important tools that may positively contribute toward improving financial well-being among users. Digital payment systems provide individuals with faster, more convenient, and transparent financial transaction mechanisms. Through mobile banking applications, UPI platforms, internet banking, and digital wallets, users can easily transfer funds, monitor expenses, pay bills, access banking services, and conduct financial transactions in real time. The availability of transaction records and digital financial data also enables individuals to track spending patterns and manage financial activities more effectively.

Such features may contribute toward improved financial planning, better financial control, and enhanced financial awareness among users. The adoption of digital payment systems may also reduce transaction-related difficulties and improve financial convenience in day-to-day life. Contactless and instant payment mechanisms save time,

increase transaction efficiency, and minimize dependency on physical cash handling. In addition, digital financial services provide individuals with easier access to online marketplaces, banking facilities, investment services, and government benefit schemes, thereby strengthening financial participation and economic engagement. The role of financial inclusion in promoting financial well-being is also highly significant. Individuals who have access to formal financial services are more likely to engage in savings behaviour, utilize banking services, access formal credit, and participate in organized financial systems. Therefore, financial inclusion and financial well-being are closely interconnected concepts that collectively contribute toward economic empowerment and social development. However, despite the potential benefits associated with digital financial services, certain challenges may negatively affect financial well-being. Concerns related to cybersecurity threats, digital fraud, privacy risks, impulsive spending behaviour, financial mismanagement, and technological dependence may create financial stress and uncertainty among users. Individuals lacking financial literacy and digital awareness may face difficulties in effectively utilizing digital financial platforms, thereby affecting their financial confidence and security. In the Indian context, the rapid growth of the digital payment ecosystem, particularly the expansion of UPI-based transactions, has significantly influenced consumer financial behaviour. The increasing use of digital payment systems has improved accessibility, transaction convenience, and financial connectivity for many individuals. However, the extent to which digital payment adoption contributes toward improving financial well-being requires systematic empirical investigation. Therefore, examining the relationship between digital payment adoption and financial well-being becomes highly relevant in understanding the broader socio-economic impact of digital financial transformation. The present study attempts to evaluate how the adoption of digital payment systems influences financial well-being among users in the National Capital Region (NCR) of India. Overall, financial well-being represents an important indicator of individuals' financial stability, confidence, and quality of life. As digital financial technologies continue to evolve, understanding their contribution toward improving financial well-being becomes essential for promoting sustainable financial development and consumer empowerment in the digital economy.

Role of Digital Payment Systems in Enhancing Financial Inclusion and Financial Well-being

Digital payment systems have emerged as important instruments for transforming the financial landscape by improving accessibility, convenience, efficiency, and transparency in financial transactions. In recent years, the rapid growth of digital financial technologies, particularly the expansion of UPI-based payment systems, has significantly influenced the manner in which individuals interact with financial services. The increasing adoption of digital payment systems has not only changed

consumer transaction behaviour but has also contributed toward promoting financial inclusion and improving financial well-being among users. One of the major contributions of digital payment systems is their role in enhancing financial inclusion by improving access to formal financial services. Traditionally, many individuals, particularly those belonging to economically weaker and underserved sections of society, faced difficulties in accessing banking services due to geographical barriers, limited banking infrastructure, and procedural complexities. Digital payment platforms have reduced these barriers by enabling users to conduct financial transactions through mobile applications, internet banking services, and digital wallets without requiring frequent physical visits to financial institutions. The widespread use of smartphones, affordable internet connectivity, and fintech innovations has further strengthened the accessibility of digital financial services. Individuals can now transfer funds, receive payments, pay utility bills, access government benefits, and perform various financial activities conveniently through digital payment applications. The simplicity and ease of use associated with digital payment systems have encouraged greater participation in formal financial ecosystems and reduced dependency on cash-based transactions. The Unified Payments Interface (UPI) has played a particularly significant role in promoting digital financial inclusion in India. UPI enables instant and interoperable financial transactions between bank accounts through mobile devices, thereby simplifying the digital payment process for users. QR-code-based transactions and merchant integration have expanded digital payment acceptance among small businesses, retailers, and local vendors, allowing a broader section of society to participate in digital financial activities. As a result, digital payment systems have contributed toward strengthening financial connectivity and economic participation across diverse demographic groups. Digital payment systems also improve transaction efficiency and financial convenience, which may positively influence individuals' financial well-being. Users can perform financial transactions quickly, securely, and conveniently without carrying physical cash or visiting banking institutions. Real-time transaction facilities, digital transaction records, automated payment systems, and easy access to financial services help individuals manage financial activities more effectively and maintain greater financial control. In addition, digital payment systems support transparency and accountability in financial transactions. Electronic transaction records provide users with better visibility regarding spending behaviour, income management, and financial planning. Such financial tracking capabilities may encourage responsible financial behaviour, budgeting practices, and informed financial decision-making, thereby contributing to improved financial confidence and stability. The integration of digital payment systems with formal banking services also creates opportunities for individuals to access broader financial products and services such as savings accounts, insurance services, investment options, and formal credit facilities. Individuals who actively participate in digital financial ecosystems may gradually develop stronger financial engagement and improved financial awareness,

which can positively affect their overall financial well-being. Digital payment systems further contribute toward economic empowerment by facilitating faster financial transactions, reducing transaction costs, and improving financial accessibility for businesses and consumers. Small merchants, entrepreneurs, and self-employed individuals benefit from digital payment acceptance through improved transaction efficiency and increased customer convenience. The expansion of digital financial ecosystems also supports entrepreneurship, economic participation, and financial independence among users. Despite these benefits, the effectiveness of digital payment systems in promoting financial inclusion and financial well-being may vary depending upon factors such as digital literacy, technological readiness, internet accessibility, trust in digital platforms, and perceived security risks. Individuals lacking digital awareness or facing technological barriers may experience difficulties in utilizing digital financial services effectively. Therefore, ensuring secure, inclusive, and user-friendly digital payment infrastructure remains essential for maximizing the positive impact of digital financial systems. In the Indian context, the rapid expansion of UPI and fintech services has created significant opportunities for strengthening financial inclusion and improving financial well-being. Government initiatives such as Digital India, Jan Dhan Yojana, Aadhaar integration, and digital financial awareness campaigns have further accelerated the adoption of digital financial services across the country. However, empirical examination is necessary to understand the extent to which digital payment adoption influences financial inclusion and financial well-being among users. Therefore, the present study seeks to examine the role of digital payment system adoption in enhancing financial inclusion and financial well-being within the National Capital Region (NCR) of India. The study attempts to provide empirical insights into how digital financial technologies influence financial participation, financial accessibility, and overall financial well-being in the evolving digital economy. Overall, digital payment systems have become important drivers of financial transformation and economic modernization. Their ability to improve financial accessibility, transaction efficiency, transparency, and financial participation highlights their growing significance in promoting inclusive financial development and enhancing the financial well-being of individuals in the digital era.

Overview of Findings

This study examined the determinants of digital payment adoption and their subsequent impact on financial inclusion and financial well-being using an extended UTAUT3 framework integrated with multidimensional perceived risk constructs. The findings indicate that facilitating conditions, perceived value, social influence, and habit significantly influence behavioural intention, whereas traditional predictors such as performance expectancy, effort expectancy, and hedonic motivation were not significant in this context. Furthermore, behavioural intention to adopt significantly enhances financial inclusion, which in turn positively affects financial well-being. These findings provide several theoretical and practical insights.

Theoretical Implications - Dominance of Facilitating Conditions and Perceived Value

Facilitating conditions emerged as a significant predictor of adoption intention, highlighting the importance of infrastructure, technical support, and accessibility in digital finance ecosystems. Similarly, perceived value significantly influenced behavioural intention to use, suggesting that cost-benefit evaluation plays a central role in digital payment decisions. This reinforces the argument that value perception may outweigh ease-of-use considerations in financially sensitive contexts. These findings extend UTAUT3 by emphasizing structural enablers over purely cognitive beliefs.

The Role of Multidimensional Perceived Risk

The multidimensional risk construct demonstrated partial influence on behavioural intention. Certain dimensions significantly affected adoption, while others were not statistically significant. This suggests that users differentiate among types of risk rather than perceiving risk as a single aggregated construct. The findings contribute to fintech literature by supporting a nuanced, disaggregated view of perceived risk.

From Adoption to Financial Outcomes

A key contribution of this study lies in linking digital payment adoption to broader socio-economic outcomes. Behavioural intention to adopt significantly enhances financial inclusion, which in turn positively influences financial well-being. This sequential relationship empirically supports the argument that digital financial technologies can serve as instruments of inclusive growth. However, the relatively low explanatory power for financial inclusion indicates that institutional, regulatory, and socio-economic factors may also play a substantial role beyond individual adoption behaviour.

Practical Implications

The findings have important implications for policymakers, financial institutions, and fintech firms. First, strengthening digital infrastructure and providing user support mechanisms may significantly enhance adoption rates. Second, digital payment providers should emphasize tangible value propositions such as transaction convenience, cost savings, and incentives rather than solely focusing on technological sophistication. Third, policymakers aiming to improve financial inclusion should recognize that promoting adoption intention alone may not be sufficient. Broader systemic interventions may be necessary to translate digital adoption into meaningful inclusion outcomes.

Contribution to Literature

This study makes three primary contributions:

It extends the UTAUT3 framework by integrating multidimensional perceived risk and socio-economic outcomes.

It challenges the dominance of effort and performance expectancy in mature digital payment contexts.

It empirically establishes a pathway from digital payment adoption to financial inclusion and financial well-being.

By integrating behavioural and socio-economic perspectives, this research bridges technology adoption theory and financial inclusion literature.

RBI's Digital Payments Policy Framework

The Reserve Bank of India (RBI), as the central banking authority of the country, plays a significant role in regulating, supervising, and promoting the digital payment ecosystem in India. With the rapid expansion of digital financial services and increasing adoption of technology-driven payment systems, the RBI has undertaken several policy initiatives and regulatory measures to ensure the safety, efficiency, accessibility, and stability of digital payment systems. The RBI's policy framework has been instrumental in supporting India's transition toward a less-cash and digitally empowered economy. One of the major objectives of the RBI's digital payments policy framework is to promote secure, efficient, affordable, and inclusive payment systems across the country. The RBI continuously works toward strengthening payment infrastructure, enhancing transaction security, improving interoperability, and encouraging innovation in digital financial services. Through various policy guidelines and strategic initiatives, the RBI seeks to create a reliable and consumer-friendly digital payment environment that supports financial inclusion and economic development. The Payment and Settlement Systems Act, 2007 provides the legal and regulatory foundation for the regulation and supervision of payment systems in India. Under this framework, the RBI is authorized to regulate payment service providers, payment gateways, prepaid payment instruments, and digital transaction platforms operating within the country. The regulatory framework ensures that digital payment systems function efficiently while maintaining transparency, security, and consumer protection. The RBI has also introduced several initiatives to strengthen the digital payment ecosystem and encourage greater adoption of electronic transactions. Initiatives such as the promotion of NEFT, RTGS, IMPS, and the Unified Payments Interface (UPI) have significantly improved the efficiency and accessibility of digital financial transactions. The RBI has consistently supported innovations introduced by the National Payments Corporation of India (NPCI), particularly the expansion of UPI-based payment systems, which have transformed the Indian digital payment landscape. To promote long-term digital payment development, the RBI periodically releases strategic policy documents and vision plans related to payment systems. The RBI's Payment System Vision documents emphasize important objectives such as enhancing customer experience, strengthening cybersecurity, increasing digital payment penetration, promoting financial inclusion, and encouraging innovation within the fintech ecosystem. These policy frameworks focus on creating robust, secure, and accessible digital payment infrastructure capable of supporting India's rapidly growing digital economy. Cybersecurity and consumer protection constitute critical components of the RBI's digital payments policy framework. With the increasing volume of digital transactions and rising concerns regarding cyber fraud, phishing attacks, data breaches, and financial scams, the

RBI has introduced guidelines related to secure authentication, transaction monitoring, fraud prevention, and grievance redressal mechanisms. Regulatory measures such as two-factor authentication, transaction alerts, customer liability protection, and digital transaction security protocols have been implemented to strengthen consumer confidence in digital financial services. The RBI also plays an important role in promoting financial inclusion through digital financial initiatives. Policies encouraging digital banking, mobile banking, Aadhaar-enabled payment systems, and low-cost digital transaction facilities have contributed toward expanding access to formal financial services among underserved populations. The central bank continues to encourage the adoption of digital financial technologies while ensuring that financial accessibility and inclusiveness remain central objectives of the digital payment ecosystem. In recent years, the RBI has also focused on supporting fintech innovation and technological advancement within the financial sector. Regulatory sandboxes, fintech collaboration initiatives, and digital innovation frameworks have been introduced to encourage responsible experimentation and development of new financial technologies. These initiatives aim to balance innovation with regulatory oversight and consumer protection. The RBI's policy framework further supports the broader national objectives of Digital India, financial digitization, and economic modernization. By encouraging secure and efficient digital payment systems, the RBI contributes toward reducing cash dependency, increasing financial transparency, improving transaction efficiency, and strengthening the formal financial ecosystem. Despite significant progress, the RBI continues to face challenges related to cybersecurity risks, digital fraud, technological disruptions, and uneven digital adoption across different regions and demographic groups. Therefore, continuous policy refinement, technological monitoring, and consumer awareness remain essential for ensuring the sustainable growth of India's digital payment ecosystem. Overall, the Reserve Bank of India's digital payments policy framework has played a transformative role in shaping the growth and development of digital financial services in India. Through regulatory support, technological innovation, consumer protection measures, and financial inclusion initiatives, the RBI continues to strengthen the country's digital payment infrastructure and promote the development of a secure, inclusive, and efficient digital financial ecosystem.

Way Forward for Digital Payments

The rapid expansion of digital payment systems in India reflects the country's ongoing transition toward a digitally integrated and technology-driven economy. The increasing adoption of UPI-based transactions, fintech innovations, and mobile banking services has significantly transformed the financial behaviour of consumers and businesses. However, the long-term sustainability and effectiveness of the digital payment ecosystem depend upon continuous technological advancement, regulatory support, digital awareness, and inclusive financial development. Therefore, strengthening the future framework of digital payments requires a

balanced approach that focuses on innovation, security, accessibility, and consumer confidence. One of the major priorities for the future growth of digital payment systems is the enhancement of digital infrastructure and internet accessibility across all regions of the country. Although urban areas have experienced rapid growth in digital transactions, certain rural and remote areas still face challenges related to internet connectivity, technological accessibility, and digital infrastructure. Expanding reliable digital networks and improving technological accessibility will play a crucial role in ensuring inclusive digital financial participation across different socio-economic groups. Improving digital literacy and financial awareness is another important requirement for strengthening the digital payment ecosystem. Many individuals, particularly first-time users, elderly populations, and economically weaker sections, may face difficulties in understanding digital financial platforms and cybersecurity practices. Therefore, awareness programs, financial education initiatives, and digital training campaigns are essential for encouraging safe and effective usage of digital payment systems. Increased awareness regarding transaction security, fraud prevention, and responsible digital financial behaviour can significantly enhance consumer confidence in digital payment platforms. Cybersecurity and data protection are also critical areas that require continuous attention in the evolving digital financial environment. The increasing volume of digital transactions has raised concerns related to online fraud, phishing attacks, privacy breaches, and unauthorized access to financial information. Strengthening cybersecurity frameworks, improving authentication mechanisms, and implementing robust data protection policies are necessary to ensure secure and reliable digital financial transactions. Regulatory authorities, financial institutions, and fintech companies must continue to invest in advanced security technologies and fraud prevention systems to maintain trust within the digital payment ecosystem. The future of digital payments is also expected to be shaped by emerging technologies such as Artificial Intelligence (AI), Machine Learning, blockchain technology, biometric authentication, and data analytics (Vermani & Arora, 2025). The integration of these technologies can improve transaction efficiency, fraud detection, customer experience, and personalized financial services. Fintech innovation is likely to create more accessible, user-friendly, and intelligent financial solutions that support the evolving needs of consumers and businesses (Dzogbenuku et al., 2022).

Another important aspect of the future digital payment ecosystem is the expansion of cross-border digital payment systems and international financial connectivity. India's initiatives toward global expansion of UPI services indicate significant opportunities for seamless international transactions, remittances, and financial integration. Such developments can strengthen India's position in the global digital economy and support international trade, tourism, and financial collaboration. The role of digital payment systems in promoting Financial Inclusion and Financial Well-being is also expected to become increasingly important in the coming years. By providing accessible, affordable, and efficient financial services, digital payment platforms can

contribute toward reducing financial exclusion and improving financial participation among underserved populations. The integration of digital payments with formal banking services may further strengthen economic empowerment, financial accessibility, and financial confidence among users. In addition, collaborative efforts among government agencies, regulatory institutions, financial organizations, fintech companies, and technology providers will remain essential for ensuring the sustainable growth of the digital payment ecosystem. Policy initiatives focused on consumer protection, digital innovation, financial accessibility, and technological standardization can further strengthen the adoption and acceptance of digital financial services. The success of India's digital payment ecosystem will also depend upon maintaining a balance between technological innovation and consumer trust. While rapid digitalization creates opportunities for financial modernization and economic efficiency, addressing issues related to security, privacy, accessibility, and digital inequality remains equally important. A secure, inclusive, and consumer-centric digital financial environment will play a key role in supporting India's long-term economic and technological development. Overall, the future of digital payments in India appears highly promising. With continuous innovation, supportive policy frameworks, technological advancement, and increasing digital participation, digital payment systems are expected to contribute significantly toward financial inclusion, economic empowerment, and the development of a digitally resilient economy.

Conclusion

This study examined the determinants of digital payment adoption and their subsequent impact on financial inclusion and financial well-being using an extended UTAUT3 framework integrated with multidimensional perceived risk constructs. The findings reveal that contextual and value-driven factors particularly facilitating conditions, perceived value, social influence, and habit play a significant role in shaping behavioural intention toward digital payment systems. In contrast, traditional predictors such as performance expectancy and effort expectancy were not significant, suggesting that digital payment technologies may have reached a level of maturity where usability and functionality are no longer primary adoption drivers. Importantly, the study demonstrates that behavioural intention to adopt digital payment systems contributes positively to financial inclusion, which in turn enhances financial well-being. This sequential relationship highlights the broader socio-economic implications of digital financial technologies and supports the argument that digital payment ecosystems can serve as mechanisms for inclusive financial development. By integrating behavioural intention models with financial outcome constructs, this research advances both technology adoption theory and financial inclusion literature. It provides empirical evidence that digital payment adoption is not merely a technological phenomenon but a pathway toward improved economic participation and well-being (Alhassan & Adam, 2021). Despite these contributions, the modest explanatory power for financial inclusion suggests that adoption alone may not be sufficient to

achieve comprehensive financial inclusion (Dev, 2006). Structural, institutional, and policy-level factors likely play complementary roles. Future research should therefore adopt multi-level frameworks that integrate individual, institutional, and macroeconomic determinants. Overall, this study contributes to a more nuanced understanding of digital payment adoption and its broader developmental implications, offering valuable insights for scholars, policymakers, and fintech practitioners seeking to leverage digital finance for sustainable and inclusive growth.

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