



## Emerging Trends and Future Challenges in the Realm of Digital Payments

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### ABSTRACT :

The Digital Revolution has been sweeping across the world over the last three decades. This revolution's rapid expansion across the developing economies is a key differentiating factor. Some countries spearheading the application and leading innovations in this field include China, India, South Asian countries, and some African countries. This study highlights the strengths of digital payments by analyzing various applications worldwide while also investigating their visible impacts and results. The study also investigates the challenges of adopting it in multiple fields. It outlines the modifications and innovations that have been incorporated into the existing system to ensure the safety and security of these transactions. Lastly, the study explores the innovations required in the future for this technology to realize its full potential.

Keywords: Digital revolution, Digital payments, financial inclusion

### 1.0 Introduction :

For any economy to reach its full potential, the financial inclusion of all citizens is essential (D'Silva et al.). In the conventional system, there have been many barriers, such as societal attitudes, legal frameworks, and prohibitively high transaction costs, which have prohibited a sizable portion of the population from participating in the financial system. However, this new technology can be a powerful tool that can break these barriers and boost access to the banking and financial system. Since digital payments mean that individual customers can use mobile phones for real-time payment services, millions of people can be integrated into this system. For example, consider India alone, where nearly half a billion adults opened bank accounts between 2011 and 2017.

Engaging individuals in adopting digital payment methods constitutes merely one facet of the endeavor; the more substantial challenge lies in preserving the acquired clientele. Sustaining and augmenting the efficacy and security of this system is imperative for customer retention, necessitating a continuous commitment to innovation (D'Silva et al.). Looking particularly at India's approach to digital finance can genuinely serve as a model for other nations, both advanced and emerging. India has recognized the importance of digital financial infrastructure as a public good. By providing all residents with a national digital biometric identity through the Aadhaar system, India has laid the foundation for broad access to the banking system. This approach can serve as a model for other nations looking to expand financial inclusion through digital means. Additionally, India's real-time payment system platform development has brought efficiencies to retail customers and small-scale transactions. This has not only improved convenience for individuals but also has the potential to stimulate economic activity by facilitating quicker and more convenient transactions.

Establishing a legal framework for data fiduciaries in India promises to ensure that individuals can readily access the data generated by their online activity and dictate the circumstances under which it may be used. This data protection and privacy focus can serve as a guiding example for other nations seeking to enact similar regulations. India's approach to digital finance presents a compelling case study with relevance and applicability for economies at various stages of development. Whether advanced or emerging, nations can draw valuable insights from India's initiatives to advance digital financial inclusion, enhance payment systems, and protect individual data rights.

### 2.0 Literature Review :

Digital Finance is a powerful tool that can potentially transform economies across the globe, be it an advanced economy like the US or a developing economy like India (D'Silva et al.). The penetration of smartphones and Internet connectivity deep into societies has empowered people to gain access to this powerful technology (D'Silva et al.). This banking and payment system has brought efficiencies to small retail businesses.

According to a study by Asia Pacific Accreditation Cooperation Incorporated (APAC) (2018) (Raharja et al.), approximately two in five consumers have issues using and withdrawing cash, including not having enough cash on hand (40%), long queues at banks/ATMs (39%), faulty ATMs and inadequate number of ATMs nearby (36%) (Raharja et al.) with the advent of smartphones and faster internet services. Customers have become accustomed to having instant access to most things they use in daily life. Hence, the acceptance of digital payments is high among customers as they now have less patience for long queues and faulty ATMs. Increasing digital access has presented considerable opportunities for innovation in digital payment across Asia.

Indian Government's ambition to build a less-Cash economy (Kant and Dhal, 2019.) while ensuring the digital payments framework is safe, secure, reliable, easy to use, and accessible to all has thrust the growth in UPI payments. The increasing use of digital payments has already given banks the advantage of reducing their physical presence in metropolitan cities.

The world's largest software giant- Google, also wanted to weigh in on India's evolution and be part of the technological wave. On January 8, 2018, Google declared that Google Wallet would be combined with Android Pay (Subramanian and Jeevanantham), with the service called Google Pay. It is now called G-pay. Google Pay is one of the first steps towards digital India. Since its launch, the volume of payments done through this app has only grown. Applications like Gpay have widened the scope of digital payments since they are now used to transfer payments to vendors or individuals and help pay government utility bills like electricity bills, water bills, etc.

First and foremost, this is (Singhraul and Garwal)an important step taken by the government of India in its fight against corruption and Tax evasion. Black money is detrimental to the growth of any nation. Cash Transactions are challenging to trace and monitor and are critical contributors to Money Laundering and terror financing. Digital payments discourage such activities, as people are wary of getting caught.

Several additional advantages to digitization include adequate monitoring of real estate prices which are essential in curbing the laundering of black money through property transactions. Secondly, it eliminates the expenses of producing and handling physical currency notes, including designing, printing, storing, and transporting them. Thirdly, it addresses India's issue of counterfeit currency, as digitization reduces the reliance on physical cash, lowering the prevalence of fake notes.

Additionally, digital payment systems offer convenience to customers, eliminating the need to visit bank branches or stand in queues with cheques while reducing transaction times. Most notably, digitization enables comprehensive tracking of transactions, regardless of their size, benefiting consumers and federal agencies alike. However, as with any system, if there are positives, people are bound to find loopholes and misuse the systems. There has been a manifold increase in the number of payment-related frauds in India since money can be transferred from bank accounts at the click of a button. But just as is the case with Antivirus and firewall providers, hackers show loopholes and help strengthen the software; these hackers expose the loopholes in the digital payments ecosystem, guiding the payment platforms and Regulators to build a robust system, one that can handle more significant volumes and a more extensive consumer base.

### 3.0 The Rise of Digital Payments :

During the pandemic, digital payments boasted their unique advantage as they enabled social distancing and avoided physical contact of notes among people. It is evident that Post-pandemic, the popularity of this system has only grown. Many countries have implemented digital payments in their economies to achieve different goals. Together, these examples can be used as blueprints by other economies to iron out their current systems and make them work smoother, faster, and more transparently. As various countries integrate existing systems with digital payments and the scale of services integrated grows, these systems can then be standardized and used at the inter-country level. The government of India has been taking leverage of the Digital platforms and integrating them with various existing systems to enhance their efficiency. Below are some of the initiatives that have been taken that have enabled the Government of India to track and maintain the records of all interdepartmental transactions, such as funds released by the central government to states through the erstwhile Planning Commission.

1. Inter-Department Payments- The Public Finance Management System (PFMS) is a platform that the government of India has commissioned and uses for various purposes. This platform has evolved into an end-to-end solution for processing, tracking, monitoring, accounting, reconciliation, and reporting financial flows into and out of the central government. It serves as a unified platform for tracking releases of financial flows and their utilization down to the last mile. India plans to integrate all existing stand-alone financial systems into PFMS. This would enable central agencies to track all payments of the Government of India, tax and non-tax, receipts, Human Resource Management Information Systems, pension systems, and General Provident Funds.
2. Government procurement- The government e-marketplace was a new experiment launched by the Government of India in August 2016. Under this, a Government e-Marketplace (GeM) was launched to enable the procurement of goods and services transparently. GeM is a paperless and cashless open platform for procuring common-use goods and services with minimal human intervention. Time-bound payment to sellers selling on the GeM platform is facilitated through integration with PFMS. This has further proved helpful in ensuring speedy procurement at competitive prices and, hence, significant savings for the government. The tenders are rolled out through this platform and auto-awarded to the minimum bidder, eliminating the possibility of corruption or favoritism while awarding contracts. In the future, the possibility of expanding this application to international players for companies looking to invest in other markets can be explored.
3. E-National agricultural market- India is predominantly an agrarian economy. Traditionally, agricultural markets in India have been both opaque and fragmented. Farmers were required to sell in a government-assigned marketplace called a Mandi (Wholesale market). This resulted in prices for commodities varying not just from state to state but also within states from one mandi to another, as there was minimal scope for regulation and no choice for the farmers but to sell in the nearest mandi due to a lack of resources. In April 2016, the government launched the e- National Agricultural Market (e-NAM) initiative. Under this, the government connected 470 mandis across 14 states electronically. Farmers use these e-markets to auction and sell their produce to the highest bidder. This has enabled direct selling and benefited the farmers by eliminating intermediaries and bringing transparency to the whole process. This initiative has boosted the agribusiness industry as all transactions are done electronically, which is fast and transparent, as opposed to the earlier cash-based system. The cash-based system was slow, and grievance redressal in such transactions can be difficult.
4. Remittance inflow (Mutero) Remittances are transactions by which migrants send money back to their country of origin. In today's world, remittances are in the form of investments in the real estate sector or the financial markets; hence, they can be seen as FDI. Globalization has led to displacing skilled and unskilled human capital to foreign countries for work opportunities.

A significant strength of PFMS comes from its integration into the existing core banking system. This integration has empowered the government to push online payments to almost any entity within the banking system, including state governments, local governments, various agencies implementing

myriad government schemes, and even individual beneficiaries of such schemes. The benefits of real-time payments and an accounting system are enormous and will only grow in the future. This platform saves the central government vast sums of money in terms of interest costs that were otherwise incurred historically because the funds sat idle with agencies. To illustrate, states are the implementing agencies for various Centrally Sponsored Schemes. The central government has disbursed funds for these schemes to the states, but states are not yet ready to use this money for implementation. Hence, this amount would sit idle, which would have otherwise earned interest for the central government. This just-in-time payment system can ensure that the central government releases the designated amount only when the implementing agencies are ready to receive it. Other benefits include automated account keeping, increasing the efficiencies of government departments, and allowing tracking and monitoring of projects.

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#### 4.0 Analysing the Challenges :

Like two sides of a coin, digital payments also have the other side. The side with challenges (Mutero) includes security issues, like hacking, phishing, misuse of data, etc. One of the biggest concerns remains privacy. The digital payment platforms prioritize data privacy, and governments have enforced several Data protection laws. Digital technologies enable the collection and analysis of data from various transaction points to generate consumer profiles quickly. The transition to a digital economy (J. Raja et al.) will foster an intimate relationship between enterprises and their customers, but this relationship can only be hardened by creating trust. The trust in this context pertains to a conviction that data related to transactions and other dealings would be secure and not be accessible to unintended people. To foster this trust, digital payment platforms need to provide a robust mechanism to ensure a secure environment for transactions by incorporating heightened security measures, and they have built their security mechanisms on the below building blocks -

- a) Encryption: provides confidentiality, authentication, and integrity.
- b) Digital signatures: provide authentication, integrity protection, and non-repudiation. -
- c) Checksums/hash algorithms: provide integrity and enable authentication.

Integration of the payments system with Central Bank regulatory requirements. (Mutero)

The current banking system is a well-oiled machinery with rules and regulations of the local governments and integrates their overseas branches into a network. Each local branch follows the local laws along with International laws. However, there is a common concern surrounding means to ensure such rules are applied to digital payments while integrating them with the current conventional banking system, a matter that all Central Banks share worldwide. For instance, in Brazil, the Central Bank and antitrust regulator suspended Facebook Inc.'s WhatsApp Pay product soon after it was launched in June 2020, citing the need to maintain a healthy competitive environment in the country. Similarly, Kenya questioned how transactions via WhatsApp Pay can be regulated and taxed. The Kenya Revenue Authority is also looking into ways to tax Facebook going forward.

Electronic fraud is also gradually gaining foot worldwide with the increased usage of digital payments and money remittances. A significant challenge posed is the permeation of perpetrators across national boundaries. Regulators have been unable to keep up with the scamsters due to limited capacity and lack of adequate legal framework for addressing cybercrimes. Owing to the ease of transactions and its accessibility, the volume is expected to increase multifold in the future. Digital payments reduce human interactions in payments and related banking needs. It is speculated to create a harsher environment for law enforcement to detect and differentiate legitimate transactions from transactions intended for illegal activities like money laundering. The only way for authorities to keep up would be to periodically enhance their scrutiny systems and facilitate international tie-ups to help detect cross-border violations.

Like any new system or method, digital payments would also face resistance as many traders would like to do their business in a traditional form as before. The element of touch is vital to individuals, which furthers their reliance and trust on physical and manual transactions. Owing to this, their comfort with virtual transactions across borders seems unimaginable. A fueling reason for such mistrust is the lack of accessible tech, malfunctions, fraud, and unavailability of devices in the time of need. Every defection diverts public opinion from the advantages of new technologies. FinTechs would need to find ways to counter such hurdles and educate people about the opportunities and costs of the same.

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#### 5.0 Assessing the impact :

Technological advancement is one of the significant factors contributing to globalisation. (Mutero) As the world is getting increasingly connected through transportation and communication channels, there is an increase in volume and the ease with which goods, services, money, people, and ideas flow globally. This calls for a low-cost and easy method of payment.

Due to the nature of their business and ease of transfer, multinational companies and those with global vendors or customers are leasing in the demand for digital payments to be available globally. Multinational payment companies such as Mastercard, VISA, American Express, and Union Pay have grown their presence and business activities in various countries and provide facilities working in tandem with banks, fintech, and local payment service providers. However, all this will only be possible with the support from governments.

PFMS tools that India uses can be replicated by other countries and would significantly benefit developing nations, where a significant chunk of the population still needs government assistance through various welfare schemes. These countries are also grappled with corruption charges, where intermediaries take the money and do not remit it to people in need. Despite implementing various schemes at different levels, the situation on the ground still needs to improve. Digital and direct payments to those in need ensure that the desired help and support reaches the last mile immediately, which requires a lot of time through traditional channels. Even during an international crisis, governments can quickly release relief funds to agencies that help citizens affected. This system is also used at the international level.

A recent example is Turkey, where the earthquake occurred in 2023. USA President Biden authorized \$50 million in Emergency Refugee and Migration Assistance Funds (ERMA) in response to the unprecedented and devastating earthquake in Türkiye and Syria. Such funds reached the affected areas immediately, while humanitarian aid took time due to physical transfers.

Other countries can replicate this case study to benefit their small-scale producers or sections of society the government wants to boost, for example,

handcrafts, to give them the power to sell directly without depending on go-betweens. Get a fair price and immediate payments for their goods.

By Far, the most far-reaching impact of Digitalization on the economy is Financial Inclusion among the masses. Various studies done in developing countries like Africa acknowledge the fact that the majority population, accounting for almost one-third of the total population, does not have bank accounts and, hence, is not financially included in the system. However, A study done (Yawe et al.) on the importance of digital money and the role it plays in financial inclusion for sustainable development in Africa underlines how digital money played a significant role in helping the people of such countries sustain through the pandemic, as they were able to receive Financial aid and assistance and pay for necessities without coming in physical contact with others—people who have been financially excluded in the past now no. For example, consider a tribe in remote localization in Africa specializing in making artifacts by processing and drying leaves and wood. They could only sell to nearby markets or commission agents who would pay the bare minimum for these products. If these people were given a platform to sell far lands for a much higher cost and receive payments instantly, this would positively impact these tribes economically and socially, as their people would become part of the economy and pay for better living conditions. Hence, the significant achievement of digitalization is the integration of historically unbanked individuals and firms into the financial ecosystem by providing diverse financial services, investment advisory services, and investment vehicles. Such a well-connected economy enables the governments to achieve their welfare goals of even the last person in line. They empower previously deprived people to access facilities like savings accounts and payments, seek credit for their small-scale businesses, access risk management services, and contribute to the nation's economic development. The higher the share of individuals and households connected financially to the economy, the greater the chances of financial growth, stability, and an efficiently functioning economy.

Financial growth is not limited to the accumulation of retirement savings, but it also means human capital accumulation through investments in education, re-tooling, and mentoring. Increased expenditures of individuals on facilities such as better medical services, taking advantage of available investment opportunities, and coping with unexpected disruptions. The failure to use the highlighted financial services, in part, leads to rising income inequality, which is not inclusive, and leads to increasing unemployment and dissatisfaction among people, leading to instability in the economy.

## 6.0 Conclusion :

According to Teima (2016) (Sam'un et al.), the development and acceleration of electronic merchant payments can help countries advance financial access and financial inclusion. However, multiple factors hinder merchants' adoption of electronic payments. Six obstacles have been identified as significant impediments that hinder the deepening of these payment systems, especially in developing countries, namely, 1) inadequate value proposition for merchants, including product designs that do not adequately encourage migration from cash to electronic payments; 2) weak product and stakeholder economics in traditional card models, 3) insufficient aggregate customer demand needed to reach the 'tipping point' that drives demand and supply towards an electronic payments ecosystem, 4) inconsistent technological infrastructure and regulatory environment in developing markets to support electronic payments, 5) ineffective distribution models to serve hard-to-reach merchants in areas with limited economic capillarity (i.e. low density of MSMEs and customer populations) and 6) difficulty in formalizing enterprises and the reluctance of merchants to pay full taxes on sales.

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