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Digital Transformation of Financial Sector in India- Evolution, Issues and Challenges

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ABSTRACT

The Indian financial sector has made significant strides in its digital journey, driven by government initiatives, technological innovation, and changing consumer behavior. This transformation has not only improved access to financial services but also increased its efficiency and transparency. The adoption of digital financial transactions in India is essential for promoting financial inclusion, convenience, transparency, and economic growth. It empowers individuals, reduces costs, enhances security, and is in synch with the government's agenda for encouraging digitalization and financial literacy in the country. Encouraging digital adoption will likely continue to be a priority in India's efforts to modernize its financial sector and promote economic development. The growth of UPI transactions in India can be attributed to its simplicity, interoperability, government support, security features, low transaction costs, and widespread acceptance. It has not only transformed the way Indians transact but has also been a catalyst for improving financial inclusion and digitalization in the country. Inspite of tremendous growth in the digital transactions in India a number of challenges like internet connectivity, cyber frauds, technological disruptions, language barriers, limited computer literacy etc. pose a sizeable threat to the growth of digital financial transactions in India and has the capacity to create disparities between the haves and have nots of the society. Addressing these challenges requires a coordinated effort from government authorities, financial institutions, technology providers, and users themselves. The article traces the evolution of digital journey in India, the need for adoption of digital financial transactions, reasons for growth of digital transactions, challenges faced in its implementation, spread of digital transactions globally and the way forward.

Key words: cyber frauds, cyber security, demonetization, digital, digital India, financial, financial inclusion, fintech, mobile wallets, NPCI, UPI.

INTRODUCTION

The financial ecosystem in India has for long been bossed by the trading community, middlemen and brokers who used traditional methods of recording and analyzing the financial transactions. However, over a period of time, the traditional methods have given way to coolness of spreadsheets and softwares using desktops and laptops. This has been made inevitable because of the fast spread of digitization in the financial sector. Digital transformation in the financial sector refers to the adoption of relevant technologies to facilitate the customers; augment processes of operations and create innovative products and services as per the needs of the customers. This process actually involves a number of novel methods including designing mobile banking apps, using artificial intelligence to improve customer service and adoption of block chain technology to provide full proof and secure financial transactions. The journey of the Indian financial sector towards digital transition started in the early 2000s, with the privatization of banking sector. These banks in the private sector adopted the best technological practices like online banking, plastic cards and ATMs to provide a seamless banking experience to the Indian consumers who had been traditionally starved of such products and services. The speed of adoption of digital financial services in India was initially slow but over a period of time the pace has increased substantially basically due to the improved accessibility and strengthening of the digital ecosystem and the growing appetite of the Indian consumers for digital financial services even in the far-flung remote areas. The Government of India's enthusiasm and push to achieve a cashless economy, especially after the demonetization drive in 2016 has proved to be a catalyst for the fast transformation of cash economy to the digital one. Digital India, the flagship program of the Govt. of India, has also contributed immensely to creating the awareness, adoption and growth of the digital financial services in the country. Since the last decade the digital payment revolution has struck the country with the usage now reaching the masses. The successful trinity of ADHAAR or the unique identity of each citizen, Jan Aadhaar universal bank accounts and burgeoning smartphones penetration with low cost data availability has accounted for the boom in digital financial transactions.

REVIEW OF LITERATURE

Renu Singh and Garima Malit (2019) observe that the banking services have improved steadily with the adoption of digitalization in the country. This has enhanced the customer services and actually provided them all products and services at their doorsteps using a laptop or a smart phone. Though, the Indian banking industry has adopted the latest technology for providing best services to the consumers but there has been a substantial difference between the rural and urban customers. The urban banking customers, due to various reasons, have adopted the technology well, whereas the rural ones still have a number of issues in the usage of the technology for conducting financial transactions. The article evaluates the various openings of growth due to the increased rural banking and also the pitfalls associated with the same. It also highlights the significance of increasing financial literacy in today's time. They should adopt latest tools of artificial intelligence and automation for not only their survival but also their future growth. The organizations in the financial sector are no exceptions and, therefore, they should also keep pace with the changing technology in order to compete effectively, economically and efficiently in today's competitive era. As a result, the financial sector is becoming sustainable due to increasing efficiency in its operations and widening the customers base by addition of all in the formal banking sector. The study highlights two aspects firstly the trends of changes in financial sector due to adoption of technology and the increased sustainability of financial institutions due to the new technology. Secondly, it focuses on the correlation between the increase of digital payments and its impact on the operational efficiency and financial inclusion of the financial institution's in Baltic States vis a vis various countries in Europe. The authors' findings conclude that countries including UK, USA, Germany and China have conducted the largest number of studies regarding the issue of digital banking transformation. In the context of India, its banking system plays a crucial role as trustees of public money and its parking in the relevant profitable business. In India and similarly placed third world countries the banks play an important role in the public finance domain as other financial institutions are still evolving. Therefore, it is vital that the banks' stability be ensured. The article concluded that adoption of digital banking services has a significant impact on the rural customers. Dr. Anand Patil remarks that the usage of digitization in the financial sector has increased due to the advent of fintech sector. Various financial sector companies in India have adopted innovative technology to address the growing aspirations of the people. The author feels that a number of new opportunities and related challenges have arisen due to the advent of technology in our financial ecosystem. This paper tries to address those opportunities and related barriers caused by digitalization in the financial arena. This paper studies the perception of bank employees with regard to new technologies. The study provides a roadmap for executive education in the Greek banks and suggests targeted training programs for the employees to for smooth transition towards digital banking. The adoption of digital payments has augmented the number of customers of micro & small traders, helped in formalizing their financial records and improved their chances of getting credit from formal channels.

OBJECTIVES

The objectives of the study are listed below: -

- To understand the digital journey of Indian financial sector.
- To highlight the initiatives undertaken by Government of India for promoting digital financial transactions in the country.
- To understand the reasons for the continuous acceleration of financial transactions in India.
- To study the challenges in the growth of digital financial transactions in India.
- To compare the usage of UPI transactions in India with other countries.
- To highlight the way forward for the digital finance in India.

RESEARCH METHODOLOGY

The research methodology followed is as under:

Data Collection- The study is based on data derived from secondary sources. The said information has been collected from various published sources like literature published by Ministry of Finance, Government of India, RBI, NITI Ayog, journals, magazines, newspapers, research papers, websites, etc.

The Digital Journey of Indian Financial Sector

Digital payments include those financial transactions wherein no physical cash is involved and the transactions use the technology for the transfer of money from one bank account to the other. Various types and methods of digital financial modes are being used in our country for trade and commerce. These include: ATM Cards, Micro ATMs, Bank Prepaid Cards Aadhaar Enabled Payment System (AEPS), Internet Banking, Mobile Banking, PoS Terminals, Unified Payments Interface (UPI), Mobile Wallets, Unstructured Supplementary Service Data (USSD),etc. The usage of digital technology has revolutionised the payments methods and thus the functioning of financial sector in India which has been transformed into an efficient, inclusive and effective tool for the benefit of the consumers. The novel innovations introduced in the financial sector are discussed hereunder:

- **Mobile Wallets**: Companies like Paytm, PhonePe, and Google Pay have introduced mobile wallets that enable users to store money digitally and make quick payments for a wide range of services.
- **Digital Lending Platforms**: Several fintech companies and digital lending platforms have emerged, offering quick and hassle-free loans to individuals and businesses. These platforms use data analytics and AI to assess creditworthiness.
- **Fintech Ecosystem**: India has witnessed a burgeoning fintech ecosystem with startups and established financial institutions collaborating to offer innovative solutions across various domains, including payments, lending, insurance, and wealth management.
- **Rural and Urban Connectivity**: The penetration of smartphones along with affordable data connections both 3G and 4G in the urban as well as rural India has played a pivotal role in expanding access to digital financial services.
- **Digital Insurance**: Insurtech start-ups have simplified the purchase and management of insurance policies through digital channels, making it easier for individuals to protect their assets and health.
- **Online Brokerages**: Online trading platforms like Zerodha and Upstox have democratized stock trading by offering low-cost trading and user-friendly interfaces.
- **Robo-Advisors**: The use of artificial intelligence and Robo-advisors for furnishing investment and portfolio management advisory to the clients after studying the algorithms.
- **KYC Digitization**: The digitization of Know Your Customer (KYC) processes has made it easier for financial institutions to onboard customers remotely, reducing paperwork and simplifying the customer experience.
- **Open Banking**: India has been exploring the concept of open banking, allowing third party fintech providers to access customer data with their consent and offer innovative financial services.
- **Cyber security and Data Privacy**: As digital financial services expanded, so did concerns about cyber security and data privacy. Various laws and rules have been promulgated to protect the hapless investors from cyber frauds. Digital Financial transactions in India The journey of digital financial transactions in India is depicted as under:

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Table 1: Digital Payment Transactions in India from 2017-23

Sr. No.	Year	Digital Transactions - Current (Crore)	BHIM Transactions - Current (Crore)	Debit Card - Current (Crore)
1	2017-18	2,070.95	91.31	334.34
2	2018-19	3,134.31	535.16	441.79
3	2019-20	4,571.78	1,251.75	512.38
4	2020-21	5,554.12	2,232.95	411.47
5	2021-22	8,637.87	4,560.79	414.75
6	2022-23	12,644.99	8,324.05	380.2

Source: RBI, PIB, NPCI, DigiDhan Dashboard

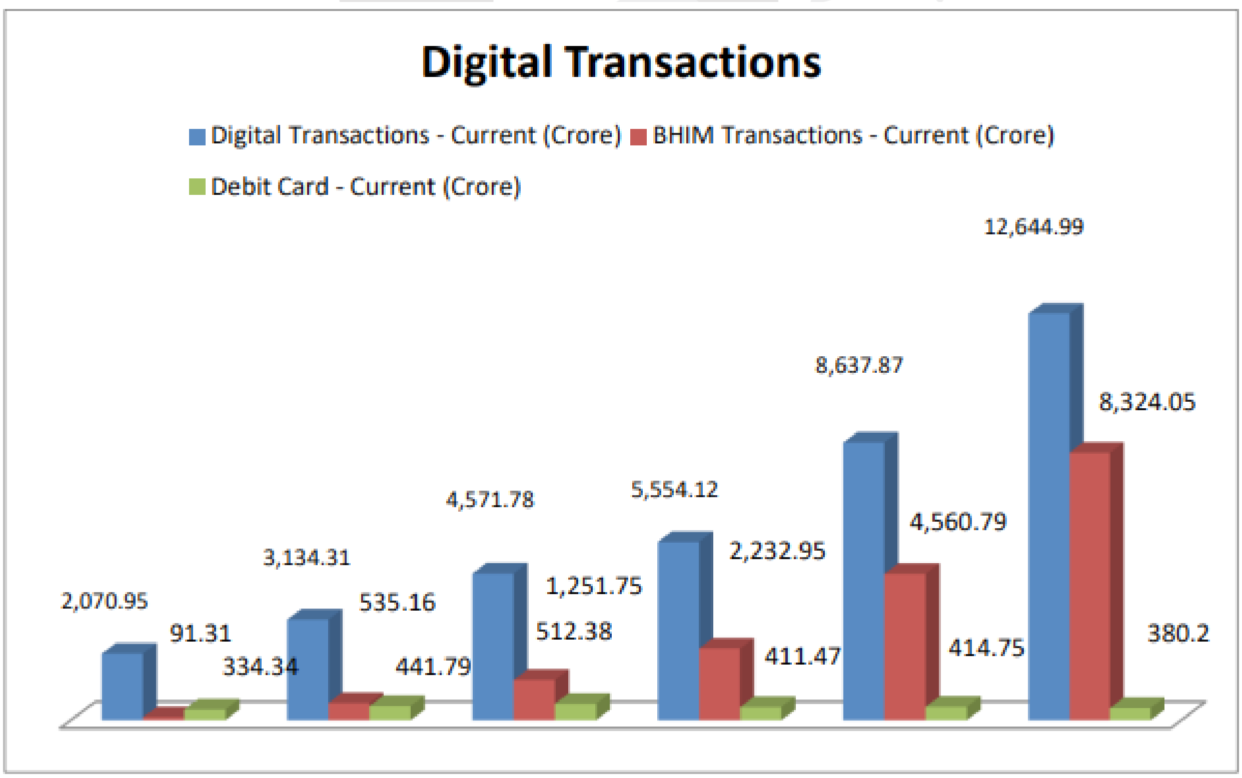

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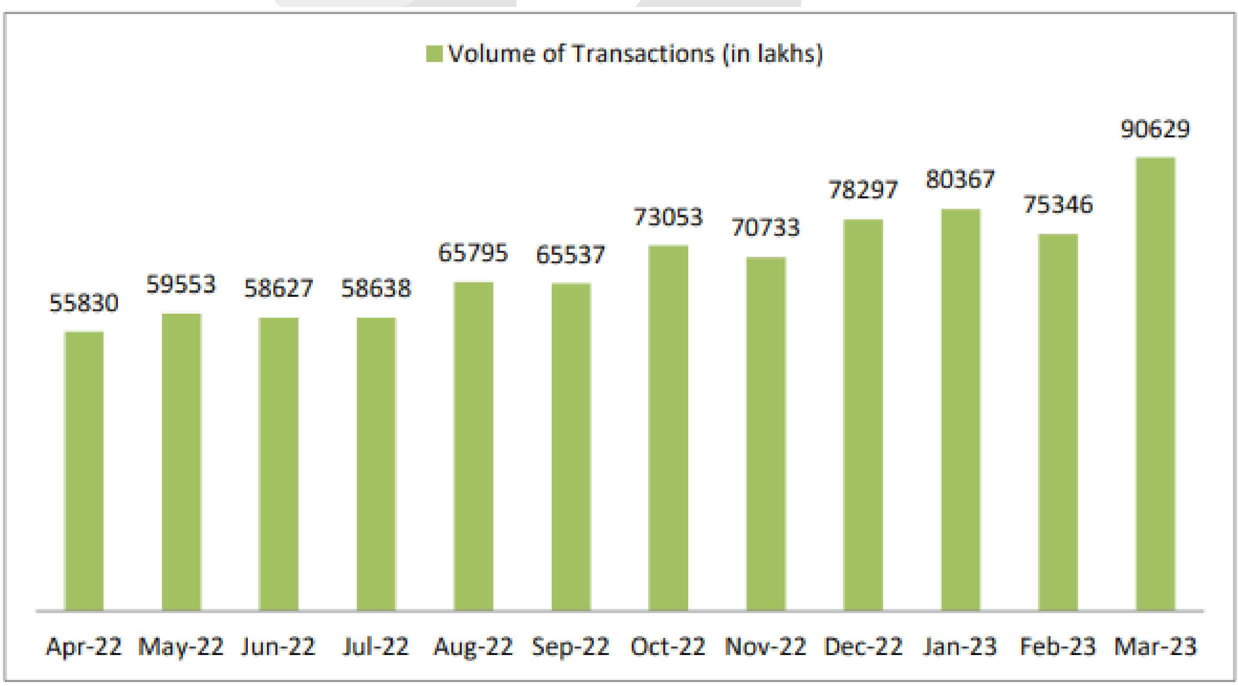
Table 2: Monthly Growth of BHIM-UPI Transactions

Sr. No.	Month	Volume of Transactions (in lakhs)
1	Apr-22	55830
2	May-22	59553
3	Jun-22	58627
4	Jul-22	58638
5	Aug-22	65795
6	Sep-22	65537
7	Oct-22	73053
8	Nov-22	70733
9	Dec-22	78297
10	Jan-23	80367
11	Feb-23	75346
12	Mar-23	90629

Source: Ministry of Electronics and Information Technology, DigiDhan Dashboard



As a result of all of the above technology adoptions, the digital financial transactions have increased manifolds in India, especially after COVID 19. In the past nine years, India has experienced a more than 100-fold increase, in the number of digital transactions, from just 127 crores in 2013–14 to 89880 crores as of April 2023. In order to encourage the Indian citizens to shift towards a less cash society, the GoI developed and introduced consumer friendly digital payment platforms like Bharat Interface for Money-Unified Payments Interface (BHIM-UPI), Immediate Payment Service (IMPS), prepaid payment instruments (PPIs) and National Electronic Toll Collection (NETC) system. All these platforms received tremendous response from the general public which led to a phenomenal growth in the digital financial ecosystem. Unified Payments Interface (UPI) which was launched in 2016 on a pilot basis with 21-member banks has revolutionized digital payments in India by facilitating users to make instant payments and transfer funds using their smartphones. At the time of its launch, the payments through UPI which only accounted for 6% as compared to 36% card payments has expanded to 63% vis- a- vis card payments which has shrunk to 9%, in 2021. In April 2023, 33 Cr+ Indian UPI users undertook 89880 crores digital payment transactions valued at Rs. 14.07 lakh crore, making UPI the nation's favourite method of payment. Thus, out of every four digital transactions made in India three are undertaken on UPI. Volume of Transactions (in lakhs) global surveys by Mastercard in India in the year 2022 revealed that around 93% of Indians made digital payments last year. More than half of these transactions were done via QR codes or digital money transfer apps in India. Initiatives of Government for Promotion of Digital Transactions The Indian government, eager to achieve a cashless economy, has been actively promoting digital financial transactions as part of the Digital India program. The main objective of the Digital India mission of the GoI is to convert the country into an empowered society driven by technology and move towards a knowledge economy. It has spurred the growth of digital financial services with handy initiatives like UPI, Aadhaar-based authentication, and eGovernance services. The use of Aadhaar, India's biometric identity system, has streamlined identity verification and made it easier to access financial services. In order to promote digital payments and create awareness about the benefits of digital payments the government launched DigiDhan Mission in June 2017. Accordingly, the Government developed consumer friendly digital financial platforms like BHIM UPI, Aadhaar Pay, UPI-QR Code, debit cards, NEFT and RTGS having very little or no charges attached to them. The government also launched Aadhaar Enabled Payment System (AePS) to facilitate a bank customer especially in rural and semi urban areas to access his bank account and make transactions without an ATM machine. Affordable smartphones and cheaper internet connections are the main reasons for the fast adoption and expansion of UPI in the country even amongst the poorer sections. Reasons for the Growth of UPI transactions in India Digital financial transactions network has spread substantially in India, off late, owing to a number of factors like push by the government, increased accessibility of internet and smartphone and the unprecedented growth in online shopping. One major reason is the adoption of Unified Payments Interface (UPI), which ensures transactions from one bank to the other in real-time and the Bharat Interface for Money (BHIM) app, which is responsible for digital financial transactions using smartphones. The key reasons are discussed as under:

- **Demonetization**: After the announcement of demonetization policy by the GoI in 2016, the citizens were encouraged to go for less cash using various digital financial platforms including UPI, as people sought alternatives to cash for their transactions.
- **User-Friendly Interface**: UPI offers a simple and user-friendly interface that allows individuals to make payments and transfers using just their smartphones. The customer friendly process makes it inclusive and easily applicable for all sections of people including the ones who are tech-challenged. Interoperability: This means that the clients can pay or receive money between various banks and wallets seamlessly, eliminating the need for multiple payment apps.
- **Wide Acceptance**: UPI is accepted by a vast network of merchants, online retailers, utility companies, and service providers across India. This widespread acceptance has made it a preferred choice for both online and offline transactions.
- **Government Support**: The GoI has initiated and developed various interface like National Payments Corporation of India (NPCI) and UPI for supporting the digital financial revolution. Initiatives like "Digital India" and "Jan Dhan Yojana" have helped in its adoption by promoting digital payments and financial inclusion.
- **Security**: UPI transactions are highly secure. They typically require two-factor authentication, with options like PIN and biometrics (fingerprint or iris scan), ensuring that only authorized users can make transactions. This has built trust among users.
- **24/7 Availability**: UPI transactions can be conducted 24/7, including weekends and holidays. This availability makes it convenient for users to make payments and transfers whenever they need to, without being restricted by banking hours.
- **Low Transaction Costs**: Many UPI transactions are either free or come with very minimal transaction costs, making it an economical choice for users as against other platforms like credit cards, which often charge hefty transaction charges.
- **Financial Inclusion**: UPI has played a significant role in bringing the non-banked citizens to banks. It has facilitated the citizens who were without bank accounts to open digital bank accounts and transact digitally.
- **Direct Benefit Transfers by Government**: The government has increasingly used UPI for disbursements of subsidies, benefits, and direct transfer of funds to citizens' bank accounts. This has driven adoption among a large segment of the population besides plugging the leaks.
- **Fintech Innovation**: The UPI ecosystem has seen continuous innovation from fintech companies, which have introduced a variety of apps and services built on top of the UPI platform. These include payment apps, financial management tools, and lending platforms, making UPI even more versatile.
- **Consumer Trust**: The success of UPI has built trust among consumers, who have come to rely on the system for everyday transactions, bill payments, online shopping, and more.

ISSUES AND CHALLENGES IN DIGITAL FINANCIAL TRANSACTIONS IN INDIA

Some of the key challenges include:

- **Cybersecurity Issues**: As UPI transactions involve sensitive financial data and personal information, they are susceptible to cyber-attacks and fraud. Cybersecurity threats, including phishing, malware, and hacking attempts, can compromise the security of UPI transactions. Recent data from the Indian Computer Emergency Response Team (CERT-In) alarm that India encountered a total of 13.91 lakh reported cyber fraud cases in 2022.According to another report on cyber security; more than half of the Indian population don‘t have the required knowledge and skill set to protect themselves from cyber frauds.
- **Rural Adoption**: Many users, particularly in rural and semi-urban areas, may not be fully aware of the security practices and risks associated with digital payments. Ensuring that users are well-informed and educated about safe transaction practices is crucial.
- **Connectivity Problems**: While mobile internet penetration has grown significantly in India, there are still areas with limited or unreliable connectivity. Ensuring that UPI transactions are accessible in remote and underserved regions remains a challenge. As against 42 % of the urban population only 15 percent of rural households have the access to good internet services. Amongst all sections, the females are the most prone to be digitally illiterate, especially in the poor households.
- **Technology Disruptions**: UPI systems, like any technology, can experience technical glitches or downtime. Such interruptions can disrupt transactions and cause inconvenience to users.
- **Dependency on Smart Phones**: UPI transactions heavily depend on smartphones and mobile devices. This can exclude individuals who do not own smartphones or are uncomfortable with digital technology.
- **Limited Digital Education**: A significant portion of the Indian population lacks digital literacy, which can hinder their ability to use UPI effectively and securely.
- **Network Congestion**: During peak usage times, UPI networks can become congested, leading to delays in transaction processing and sometimes failed transactions.
- **Fake Apps and Websites**: Malicious actors may create fake UPI apps or phishing websites to steal users' personal and financial information. These fraudulent platforms can deceive unsuspecting users.
- **Regulatory Issues**: Ensuring that UPI service providers comply with regulatory guidelines and security standards is an ongoing challenge for authorities. The evolving regulatory landscape may require adjustments to address emerging issues.
- **Managing Digital Risks by Banks/ Financial Institutions**: Banks and financial institutions need to manage the risks associated with UPI transactions effectively, including fraud prevention, dispute resolution, and customer protection.
- **Language Barriers**: The language used in the payment interfaces is majorly English, which is foreign and non-understandable to the majority of the population. Hence, it is suggested that all interfaces be multi-

lingual with wider use of local and regional languages.

- **Interoperability Challenges**: While UPI is designed to be interoperable, there can still be challenges in seamless transactions between different banks and payment service providers.
- **Limit on the Transactions**: UPI transactions have daily transaction limits for security reasons. These limits can sometimes be a hindrance for large-value transactions.
- **Universal Acceptance**: While UPI has seen widespread adoption among consumers, ensuring that a wide range of merchants, especially small businesses and vendors, accept UPI payments can be a challenge. Digital Financial Transactions Globally- An Analysis The adoption and usage of digital transactions vary from country to country, and several nations are considered leaders in the world of digital payments. The top countries in the world in terms of digital transactions often have well-established digital payment ecosystems, high levels of internet and smartphone penetration, and a strong culture of digital commerce. As already stated India has made significant strides in digital financial transactions attaining top spot both in volume as well as value.

CONCLUSION:

Digital payments have taken off in India during the last nine years. The growth of digital financial transactions in India and improved accessibility of the digital infrastructure to all Indians have helped improve ease of living for citizens, financial inclusion, cost savings, convenience, security, transparency and growth of business and economy. As a result, India has experienced a more than 100-fold increase, in the number of digital transactions, from just 127 crores in 2013–14 to 89880 crores in 2023 with more than 30 crores Indians using the same. These advantages have accelerated the digital financial payments in the country and changed the methods of business. The GoI has encouraged digital financial transactions in the country as part of its Digital India program. The adoption of digital financial transactions in India offers numerous benefits to individuals, businesses, and the overall economy including financial inclusion, security, consumer awareness, cutting costs etc. However, a number of challenges like internet connectivity, cyber frauds, technological disruptions, language barriers, limited computer literacy, etc. pose a sizeable threat to the growth of digital financial transactions in India. Nevertheless, it is envisioned that as the digital payment‘s ecosystem expands the security concerns will also arise. Today India ranks number 1 in terms of digital financial transactions both in volume as well as in number of transactions and is followed by Brazil, China, South Korea and Thailand. However, digital payment landscape is continually evolving, and the rankings may change over time as countries adopt new technologies and payment methods.

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