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The Digital Revolution in Financial Inclusion in India

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Abstract

An efficient financial system is a vital prerequisite for the socio-economic development of any nation. It plays a crucial role in collecting savings and channeling them into productive investments. Policymakers are deeply concerned about financial inclusion, as it acts as a catalyst for fostering inclusive growth within a society. Over time, both the Government of India and the Reserve Bank of India have undertaken numerous initiatives aimed at integrating financially marginalized sections of the population into the broader financial landscape. Notably, digital financial inclusion has emerged as a transformative force, particularly benefiting underserved and unserved low-income households and small-scale enterprises. This article aims to serve as a platform for identifying the multifaceted challenges, opportunities, and impacts of emerging technologies and digitalization in the context of financial inclusion during the era of Fintech. The study tries to examine the trend of indicators of digital financial. The article also highlighted the trend of top five digital payment methods in total payments in India for the period 2003-04 to 2022-23. Digital financial inclusion means using digital financial services to make sure that everyone has access to formal financial services and products at affordable and safe costs. The study conclude that the over the years in India there is more usage of the digital mode of payments by the people.

Keywords: *Financial Inclusion, Fintech, Digital Financial Services, Digital Payments*

Introduction

The world is on the edge of a big change called the digital revolution. This means that digital technologies, like computers and the internet, are changing how people live and work. These technologies have helped economies recover faster from the pandemic, and they will be important for countries to become stronger in the future. Financial inclusion involves ensuring that vulnerable groups, including low-income individuals and weaker sections of society, have affordable access to financial services and credit. This encompasses a broad array of offerings such as bank accounts, insurance, remittance and payment services, and financial advisory services. The banking industry has undergone significant changes in response to shifting customer preferences, often attributed to the emergence of "Digital finance". Digital finance, a term denoting the provision of financial services through digital channels like mobile phones, personal computers, the internet, or cards linked to secure digital payment systems, represents a groundbreaking approach to finance. It not only offers affordable and convenient banking services but also empowers users with increased control over their finances, facilitates swift decision-making, and streamlines payment transactions. The study tries to examine the trend of indica-

tors of digital financial inclusion. The paper is divided into 5 sections. Section 1 has introduction and literature review in it. Section 2 discusses data source and research methodology. Section 3 examine the trend of digital payment methods transactions from 2007-08 to 2022-23. Section 4 outlines the challenges to digital financial services. In section 5 deals concluding remark on the opportunities for India with digitalisation in financial inclusion in India.

The synergy between digital finance and financial inclusion yields numerous advantages for financial service users, digital finance providers, governments, and the broader economy. Initiatives since 2010, spearheaded by organizations like the G-20 and the World Bank, have aimed to bolster financial inclusion in developing countries, with the ultimate objective of reducing poverty levels in emerging economies. This drive for inclusion has been facilitated by the widespread adoption of digital technologies, which has expanded the spectrum of available financial services, including online and mobile banking.

This technological proliferation has given rise to a diverse array of financial tools, including e-wallets, mobile wallets, credit, and debit cards. These digital financial services have demonstrated their superior convenience and cost-effectiveness when compared to traditional banking, enabling individuals with low incomes and disadvantaged backgrounds in developing countries to participate in the formal financial system. This participation not only enables them to save and borrow but also presents opportunities for potential financial returns.

Literature Review

Carl Dahlman, Sam Mealy and Martin Wermelinger (2016) in the paper analysed the challenges and opportunities surrounding digitalization within the framework of successful case studies from countries that have adeptly navigated this dynamic and iterative process.

Lenka Kumar Sanjaya & Sharma Ruchi (2017) examined the effect of financial inclusion on economic growth in India from 1980 to 2014.The study uses annual time series data to construct a financial inclusion index by using Principal Component Analysis (PCA) to measure the financial access in the Indian economy. With the use of Autoregressive Distributed Lag (ARDL) and Error Correction Model (ECM), the findings conclude that there is a positive impact of financial inclusion on economic growth both in the long run and short run.

Bachas Pierre, Gertler Paul, et al.(2018) in their study examined how digital financial services like ATMs, debit cards, mobile money and digital credit lowers indirect transaction cost by reducing travel distance and erstwhile activities. In the study debit cards were tied to the existing savings accounts rolled out geographically over time to beneficiaries of the Mexican cash transfer program Oportunidades. The study found that debit cards reduced the median road distance to access the account from 4.8 to 1.3 kilometers (km). By using the survey method the study found that reduction in transaction costs affects the transport medium and the opportunity cost of time. The results show that the proportion of beneficiaries who walk to withdraw the transfer payments increases by 59 percent. After receiving the debit cards only 25 percent of beneficiaries had to forgo housework, childcare or work to travel to access their transfer, which earlier was 85 percent. Thus, reduction in indirect transaction costs improves financial inclusion.

Matthews Hudson Brett (2019) presents a thought-provoking analysis of the potential limitations of digital finance in achieving universal financial inclusion. The article questions the commonly held belief that the world is rapidly progressing towards universal literacy and numeracy, and highlights the often-overlooked reality that a significant portion of the world's poorest adults lack basic reading and arithmetic skills.

Singh Renu and Malik Garima (2019) examined the rural banking sector with respect to emerging challenges and opportunities in the sphere of digitalization. It analysed the significance of digital literacy in the current banking system. The article gave an understanding of

digital technology introduced in the rural banking sector. The paper suggest that there are enormous possibilities by which rural economy could become cashless economy by developing technological infrastructure in rural India and creating awareness about digital transactions and financial literacy among rural people

Banna, H. and Alam Rabiul M (2021) examined the impact of digital financial inclusion and the effect of its interaction with GDP on seven Asian countries' banking stability to see how digital financial inclusion helps to achieve banking stability through sustainable economic development. The study used unbalanced panel data of 574 banks for the period 2011-2018.The study used two financial stability measures namely, Z-score and Sharpe ratio. To the study has used regression analysis to examine the impact of digital financial inclusion and the effect of its interaction with GDP on emerging Asian banking Stability. The findings suggested that digital financial inclusion has positive impact on banking stability and an integrated inclusion of digital finance by the emerging Asian banks not only ensures banking stability , but it also ensures inclusive and sustainable economic development.

Bhathula Srinivasu and Gupta Ankita (2021) examined few determinants of financial inclusion and digital financial inclusion. The paper investigated both the access and usage dimensions of financial inclusion and digital financial inclusion with the use of binary regression analysis, using World Bank's 2017 Global Findex micro data. . The findings of the paper observed that age, workforce participation and education are significant indicator of access to a formal account and digital financial services.

Carla Fernandes, Maria Rosa Borges & Jorge Caiado (2021) evaluated the impact of digital financial services on financial inclusion in Mozambique. To achieve this, the paper employed the Autoregressive Distributed Lag (ARDL) model, utilizing data spanning from January 2011 to September 2019. The paper concluded that the long-term relationship between financial inclusion and both traditional and innovative payment methods increased and stabilized. This reflected the positive impact of digital financial services on financial inclusion in Mozambique.

Shen Yan, Hu Wenxiu & Hueng James .C (2021) examined the relationship between digital financial inclusion and economic growth by using spatial data and techniques for 86 countries. They constructed digital financial inclusion index in two stages. They modified the methodology advanced by the Human Development Index literature. They adopted the distance based approach and use the displaced ideal method to aggregate various dimensions of digital financial inclusion, as well as various indicators composing each dimensions. Their findings showed that digital financial inclusion has a significantly positive effect on economic growth, and had spatial spillover effects on neighbouring countries.

Data Sources and Methodology

The study is based on secondary data which is obtained from various reports of RBI and various Government reports. The study has taken for the period of 2008 to 2022. It examine the trend of digital payment methods transactions from 2007-08 to 2022-23 and outlines the challenges associated to digital financial services. At last concluding remark on the opportunities for India with digitalisation in financial inclusion in India.

Digital Payment System in India

Digitalization covers various payment systems, including large-value ones like the Real Time Gross Settlement System (RTGS), and retail payment systems encompassing the Paper (e.g., Cheque Truncation System (CTS), Express Cheque Clearing System (ECCS), Retail Electronic Payment Systems (e.g., National Electronic Funds Transfer - NEFT, Immediate Payment Service, National Automated Clearing House (NACH), Electronic Clearing Service (ECS), and Card Payments (Credit Card and Debit Card usage at POS and online, as well as Pre-Paid Payment Instruments - PPIs in the form of Wallets and Cards). Prepaid payment instruments are those which facilitate purchase of goods and services against the value

stored on such instruments. The value stored on such instruments represents the value paid for by the holder, by cash, by debit to a bank account, or by credit card. The Prepaid instruments can be issued as smart cards, magnetic stripe cards, internet accounts, internet wallets, mobile accounts, mobile wallets, paper vouchers and any such instruments which can be used to access the prepaid amount (collectively called Payment Instruments hereafter).

Unified Payments Interface (UPI) is a system that powers multiple bank accounts into a single mobile application (of any participating bank), merging several banking features, seamless fund routing & merchant payments into one hood.

National Automated Clearing House (NACH) is a centralised system, launched with an aim to consolidate multiple ECS systems running across the country and provides a framework for the harmonization of standard & practices and removes local barriers/inhibitors. NACH system will provide a national footprint and is expected to cover the entire core banking enabled bank branches spread across the geography of the country irrespective of the location of the bank branch. The acronym **'RTGS'** stands for Real Time Gross Settlement, which can be explained as a system where there is continuous and real-time settlement of fund-transfers, individually on a transaction-by-transaction basis (without netting). 'Real Time' means the processing of instructions at the time they are received; 'Gross Settlement' means that the settlement of funds transfer instructions occurs individually. RTGS offers many advantages for funds transfer: It is a safe and secure system for funds transfer. RTGS transactions / transfers have no amount cap set by RBI. **National Electronic Funds Transfer (NEFT)** System NEFT is an electronic fund transfer system in which the transactions received up to a particular time are processed in batches. Contrary to this, in RTGS, the transactions are processed continuously on a transaction-by-transaction basis throughout the day. **A Debit Card** is a payment instrument that can be either physical or virtual. It is linked to a Savings Bank or Current Account and serves as a means of identification. Debit cards enable various financial transactions, including cash withdrawals, online payments, Point of Sale (PoS) terminal transactions, Quick Response (QR) code transactions, and fund transfers, all subject to specific terms and conditions. A **Credit Card** is another type of payment instrument, which can also be physical or virtual. It comes with a pre-approved revolving credit limit. Credit cards allow users to purchase goods and services or obtain cash advances, again subject to specific terms and conditions. The Credit Limit is the maximum amount of revolving credit assigned to a cardholder for use in their credit card account. In the financial landscape, banks and non-bank entities issue Prepaid **Payment Instruments (PPIs)** after obtaining necessary approval or authorization from the Reserve Bank of India (RBI) under the Payment and Settlement Systems Act, 2007 (PSS Act). PPIs can be categorized as follows:

Closed System PPIs:These PPIs are issued by an entity exclusively for facilitating purchases from that specific entity. They do not allow cash withdrawal and cannot be used for third-party services' payments or settlements. The issuance and operation of such instruments do not require approval or authorization from RBI, making them exempt from RBI's regulation and supervision.

Prepaid Payment Instruments (PPIs) are further divided into two types that require RBI approval or authorization prior to issuance:

- Small PPIs: These are issued by banks and non-banks with minimal information about the PPI holder. Small PPIs can only be used for purchasing goods and services and do not allow funds transfer or cash withdrawal. They are accepted at specific merchant locations or establishments that have a contract with the issuer or use a payment aggregator/payment gateway to accept these PPIs as payment instruments.
- Full-KYC PPIs: Issued by banks and non-bank entities after completing the Know Your Customer (KYC) process for the PPI holder. These PPIs can be used for pur-

chasing goods and services, funds transfer, or cash withdrawal.

The **Electronic Clearing Service (ECS)** is a digital payment and receipt mechanism tailored for repetitive and recurring transactions. It serves as a vital tool for institutions seeking to efficiently manage bulk payments, encompassing activities like distributing dividends, disbursing interest, depositing salaries and pensions, and more.

The **Aadhaar Enabled Payment System (AePS)** stands as a secure and user-friendly payment mechanism harnessing the Aadhaar infrastructure to facilitate a wide range of financial transactions. This innovative system empowers individuals to access various banking services by using their Aadhaar number and biometric authentication.

The **Aadhaar Payment Bridge (APB)** System employs the Aadhaar number for electronically crediting government subsidies and benefits to Aadhaar-linked bank accounts, replacing the previously prevalent cash or cheque distribution methods. Beyond simply transferring benefits and subsidies under Direct Benefit Transfer (DBT) schemes, this system also contributes to the broader goal of financial inclusion. It offers the government an opportunity to revamp its subsidy management program, ushering in financial re-engineering for more effective subsidy disbursal.

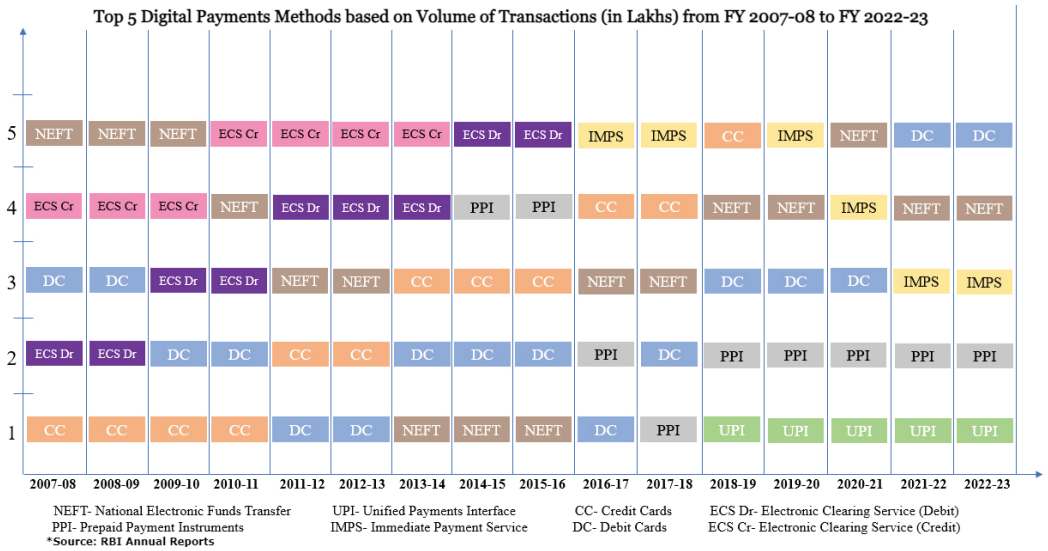

Chart 1: Top 5 Digital Payments Methods based on Volume of Transactions (in Lakh) from FY 2007-08 to 2022-23

The above chart clearly indicates the rapid growth of digital payments in recent years. This growth can be attributed to factors such as the increasing adoption of mobile banking apps, digital wallets, and online payment platforms, as well as initiatives to promote cashless transactions. Various government initiatives to promote digital payments, such as the implementation of the Unified Payments Interface (UPI) in India, have played a significant role in boosting digital transaction volumes. The Top five digital payment methods (volume of transactions) in 2023 as per the RBI reports are UPI, PPI, IMPS, NEFT and DC.

The use of low-cost smartphones and affordable data has been very important in making more people have access to financial services. These things have helped create digital ways of doing money-related things. These digital methods have made it cheaper to get new customers and provide services. This has helped both the government and financial companies reach people in cities and also in all parts of India. Some important

things that have pushed for this digital financial inclusion in the last ten years include:

JAM Trinity: This means Jan Dhan, Aadhaar, and Mobile. These three things have been like a strong foundation for creating new digital ways of doing financial services. An example of this is the Direct Benefit Transfers (DBT), where money goes directly to people.

New Digital Platforms for Transactions: Things like 24/7 IMPS and Digital Wallets have made it easy to move money between different places. This is simple, safe, and doesn't cost much.

New Ways to Pay: Using things like QR codes, UPI, mobile-linked payments, and biometrics have made paying for things much easier. This has been especially helpful in places that are not big cities.

Quick and Easy Account Opening: Digital solutions for verifying identity, like e-KYC and video KYC, have made opening bank accounts really fast and without a lot of paperwork. This has made it cheaper for banks to get new customers, which is why they can now provide banking services even in faraway areas. And it's not just banks – things like insurance, investments, and loans are also being offered using digital identity verification. This means people can get all the financial services they need.

These three things – technology, government actions, and financial companies using technology – have worked together to make sure more people in India can use financial services and be part of the financial system.

Challenges to Digital Financial Services

1. **Understanding Digital Financial Products and Services (DFS):** People should know the basics of digital money stuff so they can pick the right ones for themselves.
2. **Recognizing Digital Financial Risks:** It's crucial to be aware of the extra dangers that come with using digital money, like online scams and cyberattacks, especially when everyone's using less cash and more digital payments.
3. **Implementing Digital Financial Safety Measures:** People should learn how to protect themselves from risks that come with digital money, like avoiding spammy emails and protecting their private info, such as PINs, when they use digital financial services.
4. **Knowing Your Rights and How to Get Help:** People need to understand where and how to get help if something goes wrong, like if they lose money because of fraud. They should also know their rights when it comes to sharing their personal information.
5. The main challenge in achieving widespread financial inclusion is that many people lack the necessary knowledge about managing their money, which we call **financial literacy**. It's not just about having access to different financial services; it's also about knowing how to use them wisely.
6. **Better Consumer Protection:** When people know more about money, they can make better choices, understand the risks, and know where to get help if they need it.

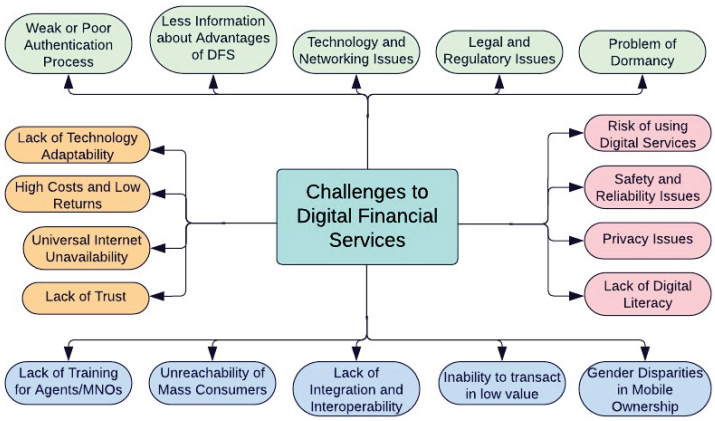

Chart 2: Challenges to Digital Financial Services

7 **Ensuring Financial Institutions Are Safe and Stable:** If people are financially literate and have access to the right info, they understand why it's important to use reliable financial institutions.

8 **Boosting Public Confidence:** Financial literacy helps build trust in the financial system. When people understand how it works, they can take part in financial decisions with more confidence.

9 **Creating Fair, Efficient, and Clear Markets:** Financially literate people can look at different financial products, understand the risks and costs, and decide what's best for them. This makes financial markets work more fairly and efficiently.

10 **Ensuring Secure Access and Growth:** When people understand money better, they can manage risks and use financial products more effectively, like savings accounts, loans, and insurance. This can help them make the most of their money.

Conclusion

The above analysis clearly indicates the rapid growth of digital payments in recent years. This growth can be attributed to factors such as the increasing adoption of mobile banking apps, digital wallets, and online payment platforms, as well as initiatives to promote cashless transactions. Various government initiatives to promote digital payments, such as the implementation of the Unified Payments Interface (UPI) in India, have played a significant role in boosting digital transaction volumes. The Top five digital payment methods (volume of transactions) in 2023 as per the RBI reports are UPI, PPI, IMPS, NEFT and DC.

Digital financial inclusion in India offers numerous opportunities for individuals, businesses, and the overall economy. India's recent progress in this field, driven by initiatives like the Pradhan Mantri Jan Dhan Yojana (PMJDY) and the growing prevalence of mobile phones and internet connectivity, has unlocked several key avenues for development. One such opportunity is expanding financial access to the unbanked population, particularly in rural areas. Digital financial inclusion can usher these individuals into the formal financial system, granting them access to savings, investment, credit, and insurance services. Moreover, digital financial services have the potential to substantially reduce transaction costs. This cost-efficiency benefits both individuals and businesses by lowering fees associated with traditional banking services and facilitating efficient electronic payments. In the context of India, digital financial inclusion is reshaping the traditional landscape of retail financial services by introducing new players and redefining roles and risks in unique ways. Successfully understanding and mitigating these risks will be paramount to harnessing the transformative potential benefits of digital financial inclusion in India.

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