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Role of Digital Financial Tools in improving Financial Inclusion in India

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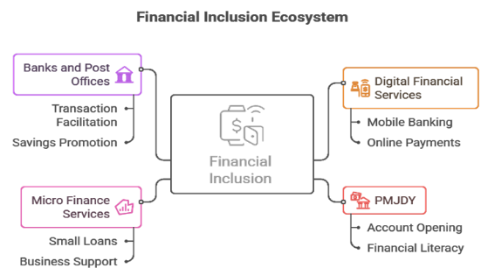
Abstract: The present research study examines the role played by digital financial tools in enhancing financial inclusion in India. In the rapidly evolving digital era, the Indian financial sector has experienced significant transformations due to the increased adoption of digital financial tools. Tools such as UPI, internet banking, mobile banking, e-wallets and various digital payment systems have gained widespread acceptance among the population. This study provides insights into the level of usage of different digital financial tools among individuals and analyzes the current status of financial inclusion in India along with the growth and expansion of digital financial services. The research is based on secondary data collected from reliable source such RBI report, NABARD, NPCI and relevant research articles. An analytical research design has been adopted for the study. To examine and interpret the data statistical tools such as trend analysis have been employed. The findings indicate that the availability of various financial services through online platforms has enabled individuals to access banking and financial services conveniently from their homes. This has led to improved financial decision making, increased saving, and growth in investment activities. Moreover, the adoption of digital financial tools has resulted in a reduction in both time and cost. The study concludes that the increased usage of digital financial tools has significantly contributed to the enhancement to financial inclusion in India, indicating a strong positive relationship between digitalization and inclusive financial growth.

Key words: Financial inclusion, Digital financial tools, FI- index, RBI, NPCI

I. INTRODUCTION

The basis of the development of the Indian economy lies in the country's financial system liberal, simple and fast then only if industries, traders and the public get easy and fast loan financing, then the cycle of business will run. Financial services should be provided to all the people of the country. Especially those who are backward. Poor and living in rural areas, so that people living in rural areas and farmers get the financial benefits of the government. Currently bank branches, ATM are also available in rural areas. In the year 2014 the government launched the PMJDY. Though this scheme even those people who do not have a single rupee can open a bank account so that they can take advantages of government scheme such as scholarship, subsidy, pension etc after the implementation of PMJDY, the number of bank account opening in the country has increased significantly, this connecting people to the formal financial system but there are still many people who do not use the banking system but get money from domestic moneylenders at higher interest rates. In the modern era, financial technology and digital services have experienced remarkable growth. In India, especially in the post covid- 19 period, the use of digital technology has increased significantly. Due to the government's cashless policy, people have increasingly shifted toward digital transaction. The scope of digital financial technology such as UPI, internet banking, mobile banking, digital wallets, and other digital payment system continue to expand every day. People now even small value transactions through digital modes. However, in India certain backward and rural regions still rely heavily on cash due to lack of digital financial literacy. Several factors contributed to this situation, including low financial awareness, security concerns, lack of trust, language barriers, poor network connectivity, and habitual preference for cash base transactions. Digital financial services including banking, insurance, postal services, various investment options, ATMs, credit cards, UPI, SIPs, mutual fund, shares, IPOs and others are now accessible from home. As a result, people are able to save both time and cost in their financial activities. To enhance financial inclusion in India, the government has introduced several schemes such as the Pradhan Mantri Jan Dhan Yojana (PMJDY), Pradhan Mantri Mudra Yojana (PMMY), Atal pension Yojana (APY) and Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJY), Pradhan Mantri Suraksha Bima Yojana, Pradhan Mantri Kisan Samman Nidhi, Financial Literacy Program. Through these initiative, individuals are encouraged to connect with formal banking institution and access a wide range of financial services. The government has undertaken multi efforts to ensure that these effectively promote broader participation in the formal financial system. The government released the Pradhan Mantri Jan Dhan Yojana to encourage more people to open bank account. A bank account is required to avail these schemes. A rural people will open bank account to avail benefits of this schemes.



II. REVIEW OF LITERATURE

Sr No.	Auther	Title	Discription
1.	(Rana et al., 2018)	Key Challenges to Digital Financial Services in Emerging Economies:The Indian Context	In this study, have been made to ensure that people recive maximun digital financial services. Accordingly the challenges faced by individuals while accessing digital financial services have been indentified and analyed. It has been observed that the development of digital financial services in India has been realtivly show.
2.	(Kandpal & Mehrotra, 2019)	Financial inclusion: The role of FinTech and digital financial services in India	This research investigates the role of fintech and digital financial services in promoting financial inclusion in India. The study specifiaclly focuses on rural populations, recognizing that people in rural areas tend to place greater trust in traditional banking system. This is primarily because rural communities often lack sufficent confidence in digital financial services.
3.	(Gupta & Thakur, 2020)	Performance Evaluation of Financial Inclusion in India: With Special Reference to Pradhan Mantri Jan Dhan Yojana (PMJDY)	This rearch study evaluates the impact of the implemetion of the PMJDY yojana on financial inclusion. The study adopts descriptive based study to analyze the changes in financial inclusion indicators before and after the introduction of the PMJDY shceme. The assessment focuses on how the scheme has influened the extent of financial inclusion over time.
4.	(Gangani, 2021)	A Study on Level of Digital Financial Inclusion among the urban youth of Gujarat.	This study measures the level of digital financial inclusion among youth in urban areas of Gujarat. Primary data were collected through a structured google form survey. The research analyze the risks, dissatisfaction and barriers associated with the use of digital financial services. The finding indicate the level of digital services usage among urban youth is at a moderate level.
5.	(Shafeeq & Beg, 2021)	A study to assess the impact of COVID-19 pandemic On digital financial services and digital financial inclusion in India	The present research reveals that after the COVID- 19 period in India, the importance of digital financial inclusion has significantly increased. With the expansion and growing use of digital technology, a noticeable growth in financial inclusion has also been observed. This research study has been conducted with the support of secondary data.
6.	(Goswami et al., 2022)	Impact of Financial Technology (Fintech) on Financial Inclusion(FI) in Rural India	This study measures the impact of FinTech on financial inclusion in rural areas of India. The research was conducted across six Indian states, and a sample of 1,000 respondents was collected from each state. Hypothese were tested using EFA and SEM modeling.
7.	(Chauhan, 2023)	The Role of Fintech in Financial Inclusion: A Survey of Low Income Individuals in	The present study examines the role of FinTech in enhancing financial inclusion among low income population in the Ahmedabad district. Primary data were collected through a structured questionnaire, and a stratified random sampling technique was employed. A total sample size of 500 respondents was considered for the analysis.

		Ahmedabad, Gujarat, India	
8.	(Bhayani & Ajmera, 2024)	Financial Inclusion: A study of Saurashtra Region of Gujarat State	A study on financial inclusion was conducted in the Saurashtra region of Gujarat. The research coverd four districts of Saurashtra, and a sample of 50 respondents was selected from each district, resulting in a total sample size of 200. The kolmogorov and smirnov test was employed for analyze of the data.
9.	(Mehta & Bhayani, 2024)	A Study of Financial Literacy of Rajkot District, Gujarat, India	This study measures the level of financial literacy among people in the Rajkot district of Gujarat, with a focus on financial literacy, development, economic growth. Primary data were collected from 100 respondents. Statistcal tools such as the t-test. ANOVA, and factor analysis were used for data analysis.
10.	(Hurwitz & Mitchell, 2025)	Financial regret at older age and longevity awareness	To prevent financial shortfalls in old age, significat importance has been given to savings. Appropriate saving practices and insurance coverage contribute to enhanced social security. The finding of this study indicate that 43% of elderly individuals experienced increased anxiety due to the absence of a regular source of income.

III. OBJECTIVE OF THE STUDY

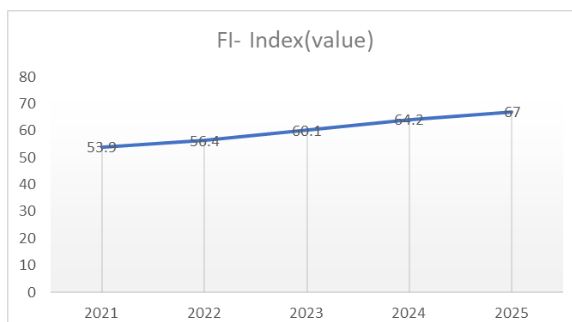
This study analyzes the growth of financial inclusion in India and examines how this growth has improved access to banking services, increased their usage, and ensured their availability at affordable costs for the population. The finding indicates that the use of digital financial tools has led to significant changes in the level of financial inclusion across the country.

Hypothesis:
H_0: over the last five years, there has not been a significant increase in the level of financial inclusion in India.
H_0: The use of digital financial tools has not level to significant change in the level of financial inclusion.

IV. METHODOLOGY

The present research study is based on secondary data for the purpose of data and analysis. The required data have been collected from authentic and reliable sources such as publication of the RBI, NPCI, NABARD and relevant research articles. To examine the patterns and relationship within the data, statistical techniques such as trend analysis, correlation and regression analysis have been employed. The study utilizes data related to the financial index for the last five years to assess recent developments in financial inclusion in India. Furthermore, digital financial tools considered in the study include UPI, mobile banking, internet banking, Paytm, and other digital payment platforms. However, for analytical precision, the study primarily focuses on UPI related as a representative indicator of digital financial transactions.

V. DATA ANALYSIS



Correlation:

	UPI volume in Mn.	*FI-Index(value)*
UPI volume in Mn.	1	
FI- Index(value)	0.990973081	1

Regression:

Regression Statistics	
Multiple R	0.990973081

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R Square	0.982027648
Adjusted R Square	0.976036864
Standard Error	0.834731152
Observations	5

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	114.2176717	114.2177	163.9231	0.001028145
Residual	3	2.090328291	0.696776		
Total	4	116.308			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*
Intercept	52.71224111	0.701737462	75.11676	5.2E-06	50.47899931
UPI volume in Mn.	0.000973179	7.60103E-05	12.80324	0.001028	0.00073128

Upper 95%	*Lower 95.0%*	*Upper 95.0%*
54.9454829	50.47899931	54.9454829
0.00121508	0.00073128	0.001215078

Interpretation:
The correlation results indicate the presence of a positive association between UPI volume and the financial inclusion index. There are two variables. Dependent and independent variable, dependent variable is financial inclusion index (FI- Index) and independent variable is selected digital tools a UPI volume. The magnitude of the correlation coefficient suggests that higher level of UPI usage is accompanied by relatively higher levels of financial inclusion. Although correlation does not imply causation, the observed relationship reflects a close co movement between digital transaction activity and expansion of financial access.

The regression analysis provides empirical evidence that variation in UPI volume are associated with changes in the financial inclusion index. The positive sign of the regression coefficient implies that an increase digital payment activity through UPI volume with an upward movement in financial inclusion. Furthermore, the coefficient of determination indicates that a meaningful share of the variation in financial inclusion can be explained by fluctuations in UPI volume, understanding the explanatory relevance of digital payments.

The trend analysis reveals a steady progression in both UPI volume and financial inclusion index over the period financial years 2021 to 2024, but financial inclusion index declared by RBI 2025 including in this research. Financial inclusion index continuously increased. The sustained rise in UPI volume reflects the gradual deepening of digital payment adoption among users. In parallel, the financial inclusion index demonstrates an improving pattern, indicating enhanced access to and usage of formal financial services. The alignment of these trends suggests that the diffusion of digital infrastructure has evolved alongside improvement in financial inclusion.

Taken together, the findings from correlation, regression and trend analysis suggest that UPI volume is closely associated with the evolution of financial inclusion. The empirical pattern observed in the study highlight the relevance of digital payment mechanisms in facilitating broader participation in the formal financial system. These results provide context specific insights and add to the growing body of secondary data-based research on digital financial and financial inclusion in India.

The financial inclusion index (FI Index) released by the reserve bank of India a serve as a comprehensive measure of the outreach and effectiveness of financial services in the country, encompassing dimensions such as access, usage, and quality. An examination of the FI index over the period from 2020-21 to 2024-25 indicates a steady and notable enhancement in the level of financial inclusion in India. During this period, the FI index from 53.9 in 2020-21 to 67.0 in 2024-25, reflecting a clear upward movement over five consecutive years. This sustained increase suggest that a growing proportion of the population has been brought within the formal financial system, with improved access to banking facilities, digital payment mechanisms, credit services, insurance coverage, and pension schemes. The relatively faster improvement after 2021 can be primarily linked to the expansion of digital financial infrastructure. The increased penetration of UPI based payment system, mobile banking services, and fintech enabled platforms has significantly transformed the manner in which financial transaction are conducted. In addition government led initiative such as the Pradhan Mantri Jan Dhan Yojana, the direct benefit transfer mechanism and the digitisation of welfare disbursements have strengthened the connection between households and formal financial institutions.

Importantly, the rise in the FI index does not merely reflect an increase n the number of financial account but also indicates higher levels of activity usage and improvement in the overall quality of financial services. Enhancement digital awareness among user and the adoption of customer-oriented banking practices have contributed to greater engagement with formal financial channels. Nevertheless, despite the overall progress, certain structural challenges continue to remain. Regional imbalances, variations in digital literacy, and restricted access to formal credit in specific rural and economically weaker regions pose ongoing concerns. Consequently, although the upward trend in the FI index highlights substantial advancement focused and region specific policy measures remain essential to ensure equitable and inclusive financial development. In summary, the consistent rise in the financial inclusion index the period 2021-2025 demonstrates the deepening integration of the population into the formal financial system and emphasises the pivotal role of digitalisation in advancing financial inclusion in India. This progress indicates a shift from basic financial access towards deeper, usage driven and quality orientation financial inclusion.

VI. SUGGESTION

As the current research study relies exclusively on secondary data based, future studies could benefit from the inclusion of primary data collection techniques such as structured surveys or in dept interviews. Such an approach would allow researchers to capture more nuanced perspectives on individual usage patterns and experience related to digital payment platforms and financial inclusion. Additionally, expanding the temporal scope of analysis and integrating supplementary variable, including levels of digital awareness, income differentials and region variations, may strengthen the explanatory power of subsequent research. The adoption of mixed method framework, combined with geographically focused datasets, could further facilitate a more detailed examination of the evolving relationship between digital payment system and financial inclusion. Awareness regarding cyber security, cyber security, data privacy and digital fraud prevention should be increased to build trust among users and encourage wider adoption of digital financial services.

VII. CONCLUSION

In India, the volume of financial participations conducted through digital platforms has increased significantly in recent years. Alongside this growth, a wide range of banking and financial services have become easily accessible to individuals through online channels, enabling them to avail these services from their homes. As the adoption and usage of digital financial tools have expanded, a substantial improvement in the level of financial inclusion has also been observed.

The present research study is based on the use of secondary data. However, if this study were to be conducted using primary data, it would provide a realistic and in-depth understanding of the various challenges faced by individuals in accessing and using digital financial tools. Identifying and addressing these practical issues would help in removing existing barriers, thereby facilitating further enhancement of financial inclusion.

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