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Digital Finance Revolution: Evaluating its Effects on Inclusive Financial System

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Abstract

Over the past few years, there has been notable progress in India's efforts to enhance financial inclusion. The impact of adopting Digital Financial Services (DFS) has been on the rise, reflecting the Government of India's ongoing commitment to extending financial services to those who are traditionally underserved in the banking sector. To expand financial inclusion and create a secure operational atmosphere for digital financial businesses, India should aim to reach out to the underserved sections of its population. With this regard, this research explores the profound impact of adopting DFS on Financial Inclusion (FI), a topic of increasing significance in today's global economy. The research employs a comprehensive approach, encompassing both quantitative and qualitative analyses, drawing upon primary and secondary data sources. A key dimension under scrutiny includes access to technology, trust and security, transaction cost, product offerings and digital literacy of digital financial service adoption. By surveying through a questionnaire, primary data is collected from 510 respondents. The study used a cross-sectional research design. The data underwent cleaning and analysis using the statistical technique of structural equation modelling to investigate the association among the constructs and variables. The finding of the study indicates that adopting DFS has a significant impact on financial inclusion and it mitigates the traditional barriers to financial inclusion such as physical distance, documentation requirements and transaction costs. The study contributes to the evolving discourse on financial inclusion by shedding light on the multifaceted impact of adopting digital financial services.

Keywords: Access to Technology, Digital Financial Services, Financial Inclusion, Product Offerings, Transaction Cost

1. Introduction

In recent years, India has witnessed a profound shift towards digital finance due to the increasing integration of information technology and financial services. This transformation encompasses various aspects of digital finance, including mobile payments, online banking, financial service outsourcing, and online loans. These changes have not only revolutionized financial formats but have also significantly impacted people's daily lives. The emergence of FinTech companies has played a pivotal role in reshaping the traditional financial services landscape, making financial services faster, more cost-effective, efficient, and accessible. FinTech firms aim to attract customers with products and services that are more user-friendly, efficient, transparent and automated than those currently available (Dorfleitner *et al.*, 2017).

Financial literacy encompasses a variety of elements, with the emphasis being on the knowledge itself and/or the capacity to acquire and apply knowledge (Zait & Bertea, 2014). Digital literacy is the ability to utilize technology to locate, generate, analyze, and convey information (Alexander *et al.*, 2016). It thus requires both technical and cognitive skills

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to use the technology. Several elements of digital financial literacy were outlined by the Organization for Economic Co-operation and Development (OECD, 2018), including awareness of digital financial hazards, knowledge of digital financial products and services, and consumer rights and redress channels. These definitions highlight the concepts' diversity and importance because they all call for literacy and knowledge to be used successfully.

The contemporary banking sector's development is primarily founded on information technology and technology-based electronic financial systems. The rapid expansion of mobile networks into previously underserved regions and communities in India over the past decade has further accelerated this transformation. Payments banks have emerged as an alternative route to online and mobile banking, enhancing efficiency and reducing costs in serving clients in rural and semi-urban areas. Projections indicate that the Indian FinTech industry is poised to generate approximately $200 billion in revenue by 2030, potentially contributing 13 per cent of the global FinTech industry's total revenue (RBI Report, 2023).

In India, a nation rapidly digitizing, DFS hold great promise for achieving financial inclusion, particularly among the most vulnerable and remote populations. Technological advancements and adoption have significantly improved the reach and depth of digital financial services. The Jan Dhan, Aadhaar, and Mobile (JAM) ecosystem has been instrumental in revolutionizing financial inclusion, with the percentage of adults in India having access to bank accounts increasing from 35 per cent in 2011 to 78 per cent in 2021. Over 500 million Jan Dhan bank accounts have been opened, and as of November 30, 2022, 1.35 billion Aadhaar identities have been issued (RBI Report, 2023). This has enabled FinTechs to offer paperless and contactless financial services, enhancing customer convenience, transaction security, and identity fraud mitigation.

Government initiatives and private-sector innovations have been pivotal in driving the digitization of financial services in India, expanding financial infrastructure, and reaching unbanked and underbanked populations. The COVID-19 pandemic has further accelerated this digital transformation, enabling millions of individuals previously excluded from or with limited access to financial services to transition from a cash-centric financial landscape to one where they can engage with formal financial offerings using digital technologies. This shift encompasses a wide range of services, including payments, transfers, savings, credit, insurance and even securities investment. The pace of change in this digital landscape continues to be swift, driven by the ongoing emergence of new technologies. Due to technological advancements, the significance of DFS has greatly increased in the economy.

Examining the pivotal role of DFS in promoting inclusive economic growth is imperative in the contemporary era. Despite the considerable attention devoted to researching DFS, there is a noticeable dearth of studies delving into their effects on financial inclusion in rural areas. These sectors remain relatively unexplored, with research still in its early stages. This study seeks to comprehend the ramifications of embracing DFS on financial inclusion. It endeavours to analyze the impact of various external factors such as access to technology, trust and security, transaction costs, product offerings, and digital literacy on financial inclusion. The research will scrutinise the intricate relationship between DFS and FI.

2. Review of Literature

Numerous pieces of literature have explored the relationship between the adoption of DFS and their impact on financial inclusion. For instance, studies conducted by Jack and Suri (2014) delve into the connection between digital finance and poverty reduction. Their findings suggest that access to DFS can assist vulnerable populations in stabilizing their consumption, amassing assets, and managing financial crises, ultimately contributing to a reduction in poverty. In a similar vein, Haider (2018) emphasises that access to digital technologies, especially mobile phones, internet connectivity, and biometric authentication, opens up a broader spectrum of financial services, including online banking, mobile

phone banking, and digital credit, for those without access to traditional banking. These DFS often offer greater convenience and affordability compared to conventional banking services, allowing people in developing countries to save and borrow within the formal financial system. The potential for DFS to extend financial services to a substantial portion of society, including the economically disadvantaged, is significant, thanks to transformative technologies like internet banking, mobile banking, e-wallet systems, and secure digital payment infrastructure, often offered at affordable rates (Siddik *et al.*, 2020). Moreover, the acknowledgement of the favourable outcomes associated with investing in electronic devices, software, technical systems, and ATMs (fintech) is widespread, particularly in enhancing the performance and sustainability of the financial and banking sectors (Hassan, 2022; Liu *et al.*, 2021).

Internet access and coverage play pivotal roles in establishing an economy centred on DFS and financial inclusion, particularly for those lacking physical access to bank branches (Olaniyi & Adeoye, 2016). Meanwhile, Hewa-Wellalage (2017) examined the influence of DFS on Ghana's financial inclusion. Their study reveals that mobile subscriptions have a significant and positive effect on financial inclusion, suggesting that the adoption of DFS will have a favourable impact on the financial sector. The scope of DFS is expanded to encompass technologies like e-money, cloud computing, big data analytics, blockchain, and distributed ledger technologies, all of which make cost-effective financial services and products accessible to a wider audience. DFS have the potential to minimize the barriers to expanding financial inclusion, thereby broadening access while significantly reducing the costs associated with financial services (Soriano, 2017).

The existence of a robust consumer protection framework specifically designed for DFS is essential for fostering trust and confidence among customers. This, in turn, helps alleviate concerns about data security and transaction errors, thereby reducing the voluntary exclusion of individuals from the digital financial system (Malady, 2016). A study on fintech adoption in China discovered that customers' trust in fintech services provided by banks plays a significant role in influencing their willingness to embrace these services (Hu *et al.*, 2019). Similarly, McKee *et al.* (2015) find that when consumers encounter issues in various forms of digital finance, such as mobile money systems, leading to potential risks, it diminishes their trust, lowers adoption rates, and hampers usage of such services. The major factors which determine the adoption of Fintech include personal innovativeness, perceived usefulness, social influence, perceived ease of use, security concerns, perceived enjoyment, and demographic variables, which significantly impact the intention to adopt Fintech in Malaysia (Chong *et al.*, 2019)

Enhancing options, pricing, and tailoring offerings to individual circumstances, coupled with the responsibility of lenders to accurately assess consumers' needs and capacities and provide products aligned with those needs, are crucial for advancing financial inclusion through digital money services (Prathap & Khaitan, 2016). The key to expanding access to and use of DFS lies in providing financial literacy to empower individuals as informed financial consumers. Individuals with digital financial literacy can better comprehend financial resilience and choose digital financial products that suit their needs (Morgan *et al.*, 2020). A study conducted among adults in India who use DFS indicates that proficiency in Digital Knowledge, Financial Knowledge, Knowledge of DFS, awareness of risks associated with digital finance, ability to control digital finance risks, understanding of customer rights, product suitability, product quality, adherence to gendered social norms, practical application of knowledge and skills, self-determination to use acquired knowledge and skills, and decision-making capabilities are pivotal factors influencing Digital Financial Literacy (DFL) among adults in India. Furthermore, the study concludes that individuals utilizing DFS without adequate DFL may face various challenges, including incomplete transactions, financial losses, and breaches of privacy. Therefore, possessing Digital Financial Literacy is deemed essential for the effective utilization of DFS (Ravikumar, 2022).

3. Research Model

The literature review highlights the adoption and usage of digital finance services and their contribution towards financial inclusion. Access to technology, trust and security, transaction cost, product offerings and digital literacy are the variables contributing to the adoption of digital finance services. Hence, based on these variables following research conceptual model is developed.

Objective of the study: To determine the impact of adopting digital finance services on financial inclusion.

Based on the said research mode, the following hypotheses are drafted.

H1: Access to technology has a significant influence on adopting DFS for Financial Inclusion

H2: Trust and Security have a significant influence on adopting DFS for Financial Inclusion

H3: Transaction cost has a significant influence on adopting DFS for Financial Inclusion

H4: Product offerings have a significant influence on adopting DFS for Financial Inclusion

H5: Digital Literacy has a significant influence on adopting DFS for Financial Inclusion.

4. Research Methods

This descriptive study employs a quantitative method that seeks to assess the influence of embracing DFS on financial inclusion. The primary data is gathered through a questionnaire survey conducted among individuals utilizing DFS in two districts of Karnataka, namely Dakshina Kannada and Udupi. The research adopts a cross-sectional approach, collecting data in a single instance. A meticulously designed closed-ended questionnaire divided into two categories, the first part of the questionnaire enquired about the demographic factors of respondents. The second part of the questionnaire included a statement about DFS and financial inclusion ranked on a Likerts scale of one to five, ranging from 1 (strongly disagree) to 5 (strongly agree), drafted for data collection.

SPSS 22 is used to assess the data initially. Factor analysis is then employed to identify a suitable structure assumed to exist within the set of multivariate observations. Exploratory Factor Analysis gauges the latent variables influencing each dimension of the scale without forecasting the structured outcome. In contrast, Confirmatory Factor Analysis anticipates the structured outcome of previously explored

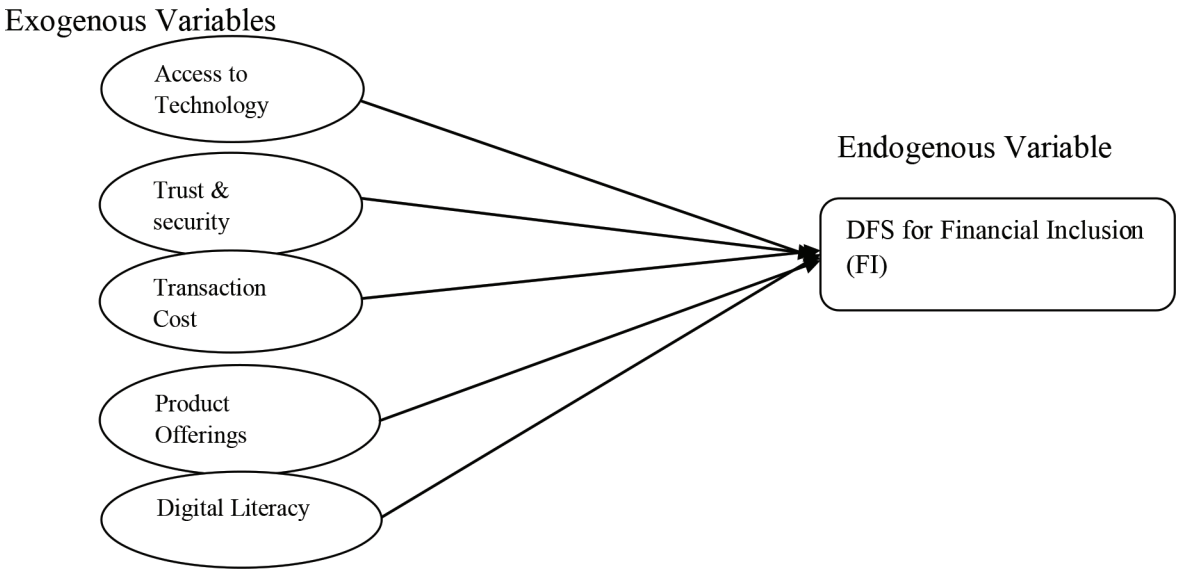

Figure 1. Research conceptual model.

components and scrutinizes potential relationships between predefined variables and items. CFA utilizes maximum likelihood estimation to assess internal consistency, divergent validity, convergent validity, and discriminant validity. Following this, the SEM method, which combines factor analysis and path analysis, was implemented through the AMOS 26 software to evaluate the theoretical connections among constructs and to test the hypotheses. This method allows for the simultaneous assessment of intricate interactions among multiple variables.

Sample Size Determination: According to Cochran 1963, at a 95% level of confidence and 5% precision, $n= z^2pq/ e^2$, the total sample is 384. Out of the total 550 questionnaires distributed, 521 were returned, resulting in an approximate response rate of 94%. However, 11 questionnaires were excluded due to incompleteness. Consequently, the effective sample size for this study was reduced to 510, surpassing the recommended threshold of 200 for Structural Equation Modeling (SEM) data analysis (Hoogland & Boomsma, 1998).

5. Results and Discussions

5.1 Demographic Analysis

The socio-economic profile of the survey results of 510 respondents of the study found that 53.7 per cent of the respondents are female and the remaining 46.3 per cent are male. Out of all the respondents, 39.6 per cent are graduated, 22.7 per cent have secondary level education and pre-university level of education and 14.9 per cent of the respondents are diploma qualified. Major portions (37.3) of the respondents are daily wage workers, 27.3 per cent of the respondents are business owners, 20.4 per cent are professionals and 15.1 per cent of them are farmers. 18.4 per cent of the respondents belong to the income group above 40000 pm., 22.5 per cent have income below 20000 pm, 26.3 per cent of respondents have an income between 30000-40000 pm, and 32.8 per cent have income between 20000-30000 pm.

5.2 Descriptive Statistics

The assessment incorporates inquiries related to DFS to elucidate respondents' responses, with mean and standard deviation appropriately computed. Table 1 provides descriptive statistics, while Table 2 presents model statistics of the study. The recorded values indicate a positive outlook on statements about the adoption of DFS for financial inclusion. The outcomes of the measurement are displayed in Tables 1 and 2.

5.3 Factor Analysis and Measurement Model

The current connection between the items and latent variables has been established through the utilization of a measurement model. Table 2 and Figure 2 illustrate that five exogenous components - namely, access to technology, trust and security, transaction cost, product offerings digital literacy and one endogenous variable are loaded onto the 25 elements comprising the proposed model in this study.

The Kaiser-Meyer-Olkin test outcome reveals a value of 0.844, indicating the sample is adequate. All the scale items are included in deriving the latent variables used in data analysis. The initial Confirmatory Factor Analysis (CFA) model exhibited a satisfactory fit without the need to eliminate any dimensions for the creation of a more fitting measurement model. Evaluation of the fit indicators from the primary pattern assessment suggests retaining the original model's findings as the final model. The CFA results indicate that χ^2=10727.060 (df 271), p.001, suggesting that the data align with the measurement model.

The study's reliability and validity are assessed through computations of factor loadings, Cronbach's alpha, composite reliability, and Average Variance Extracted (AVE). The factor loadings exceed 0.600, representing that the factor extracts sufficient variance from the variables. All composite reliability values surpass 0.600, indicating strong internal reliability for the latent variables. AVE values exceeding 0.800 confirm convergent validity (Fornell C & Larcker F, 1981).

5.4 Structural Equation Model (Path Diagram and Path Analysis)

The structural model reveals the study's findings, depicting path coefficients that link independent constructs to dependent constructs in alignment with the research model's representation of the research

Table 1. Descriptive Statistics

			N= 510	
Variables	Code	Constructs	Mean	SD
Access to technology	ATT1	I have easy access to a smartphone or digital device	4.275	.9523
	ATT2	I have reliable internet connectivity for using DFS	4.204	1.0346
	ATT3	I find it convenient to use DFS due to the availability of technology	4.204	1.0478
	ATT4	I believe that improvements in technology have made DFS more accessible and user-friendly	4.204	1.0421
Trust and security	TS1	I trust that my personal and financial information is secure when using DFS	4.241	.9984
	TS2	I believe that the use of multi-factor authentication (e.g., OTPs, biometrics) enhances the security of DFS	4.253	.9613
	TS3	I would be more inclined to use DFS if there were clearer information about the security measures in place.	4.212	1.0292
	TS4	I have concerns about the security of my financial transactions when using DFS.	4.194	1.0562
Transaction Cost	TC1	I find that the transaction costs associated with DFS are reasonable	4.220	1.0294
	TC2	I am concerned about the fees when using DFS.	4.216	1.0529
	TC3	I believe that the transaction costs of DFS are lower than those of traditional banking services.	4.186	1.0723
	TC4	The transaction costs associated with DFS impact my decision to use them regularly	4.208	1.0563
	TC5	I am willing to pay slightly higher transaction costs if it means greater convenience and efficiency with DFS	4.190	1.0952
Product Offerings	PO1	DFS offer a wide range of products that meet my financial needs.	4.206	1.0779
	PO2	Digital financial service providers offer user-friendly and intuitive interfaces for their products	4.204	1.0534
	PO3	I believe that DFS are more innovative in their product offerings compared to traditional banks	4.208	1.0711
	PO4	I am satisfied with the variety of financial products available through DFS	4.200	1.0781
Digital Literacy	DL1	I feel confident in my understanding of how DFS work	4.520	1.0941
	DL2	I am comfortable using DFS to manage my finances.	4.510	1.1085
	DL3	I believe that improving my digital and financial literacy would enhance my ability to benefit from DFS.	4.529	1.0794
	DL4	I would be interested in participating in digital literacy programs or workshops focused on DFS	4.514	1.0906
Adopting DFS for FI	DFS FI 1	DFS has improved my access to financial resources and services.	4.533	1.0498
	DFS FI2	I believe that DFS are essential for promoting financial inclusion in our community	4.516	1.0706
	DFS FI3	I find DFS convenient and easy to use.	4.508	1.0780
	DFS FI4	I have recommended DFS to others as a means to improve their financial inclusion.	4.506	1.0961

Source: survey data

hypotheses. Figure 2 and Table 3 depict the path diagram and path analysis.

Path analysis was used to examine the strcutural equation model. The model is determined as fit since the fit indices GFI (0.91), NFI (0.926), and CFI (0.931) are more than 0.9 and the RMSEA(0.051) is less than 0.08. From the SEM result it is evident that access to technology, trust and security, transaction cost and product offerings shows association with the values of 0.286 ($\beta = 0.286$, $p<0.001$), 0.279 ($\beta = 0.279$, $p<0.001$), 0.230 ($\beta = 0.230$, $p<0.001$) and 0.277 ($\beta = 0.277$, $p<0.001$) respectively. Digital literacy shows a strong association with the value of 0.921($\beta = 0.921$, $p<0.001$). Overall the results of path analysis reveal that access to technology, trust and security, transaction cost, product offerings and digital literacy have an association with adopting DFS for Financial Inclusion. Hence, all the hypotheses are accepted.

Access to technology, trust and security, transaction cost, product offerings, and digital literacy are the variables adopted to measure the responses towards

Table 2. Model Statistics

Variables	Loadings of factor		SE	Squ. Multiple R	Cronbach α	CR*	AVE**
	EFA	CFA					
ATT					0.777	0.674	0.883
ATT1	.711	.893	***	0.715			
ATT2	.763	.807	0.052	0.803			
ATT3	.700	.762	0.061	0.642			
ATT4	.607	.738	0.029	0.62			
TS					0.723	0.671	0.899
TS1	.682	.918	***	0.329			
TS2	.673	.992	0.05	0.644			
TS3	.722	.989	0.029	0.63			
TS4	.695	.811	0.055	0.749			
TC					0.733	0.661	0.811
TC1	.713	.901	***	0.007			
TC2	.817	.781	0.112	0.078			
TC3	.896	.630	0.05	0.783			
TC4	.770	.931	0.03	0.842			
TC5	.645	.625	0.077	0.812			
PO					0.754	0.679	0.912
PO1	.796	.853	***	0.564			
PO2	.801	.901	0.038	0.673			
PO3	.802	.912	0.04	0.762			
PO4	.836	.715	0.025	0.774			
DL					0.771	0.621	0.853
DL1	.754	.902	***	0.211			
DL2	.753	.978	0.049	0.974			
DL3	.839	.863	0.053	0.374			
DL4	.891	.712	0.053	0.666			
DFS					0.764	0.632	0.917
DFS FI1	.750	.844	***	0.732			
DFS FI2	.703	.752	0.029	0.883			
DFS FI3	.854	.756	0.028	0.881			
DFS FI4	.693	.833	0.027	0.271			
Cumulative(%)	71.760						
KMO	0.844						
P-value	0.000						

CR= Composite Reliability, AVE= Average Variance Extracted.
Source: Survey Data

adopting DFS. The result, opined that access to technology is associated with adopting digital financial services, which is in line with the previous research (Szopinski, 2016; Haider *et al.*, 2018; Hu *et al.*, 2019). Access to technology is a fundamental enabler for the widespread adoption of DFS. It not only facilitates the use of digital platforms but also plays a crucial role in promoting financial inclusion, reducing barriers to entry, and improving the overall efficiency and accessibility of financial services.

The result of the study revealed that trust and security are positively associated with adopting digital financial services. By addressing concerns, mitigating risks, and

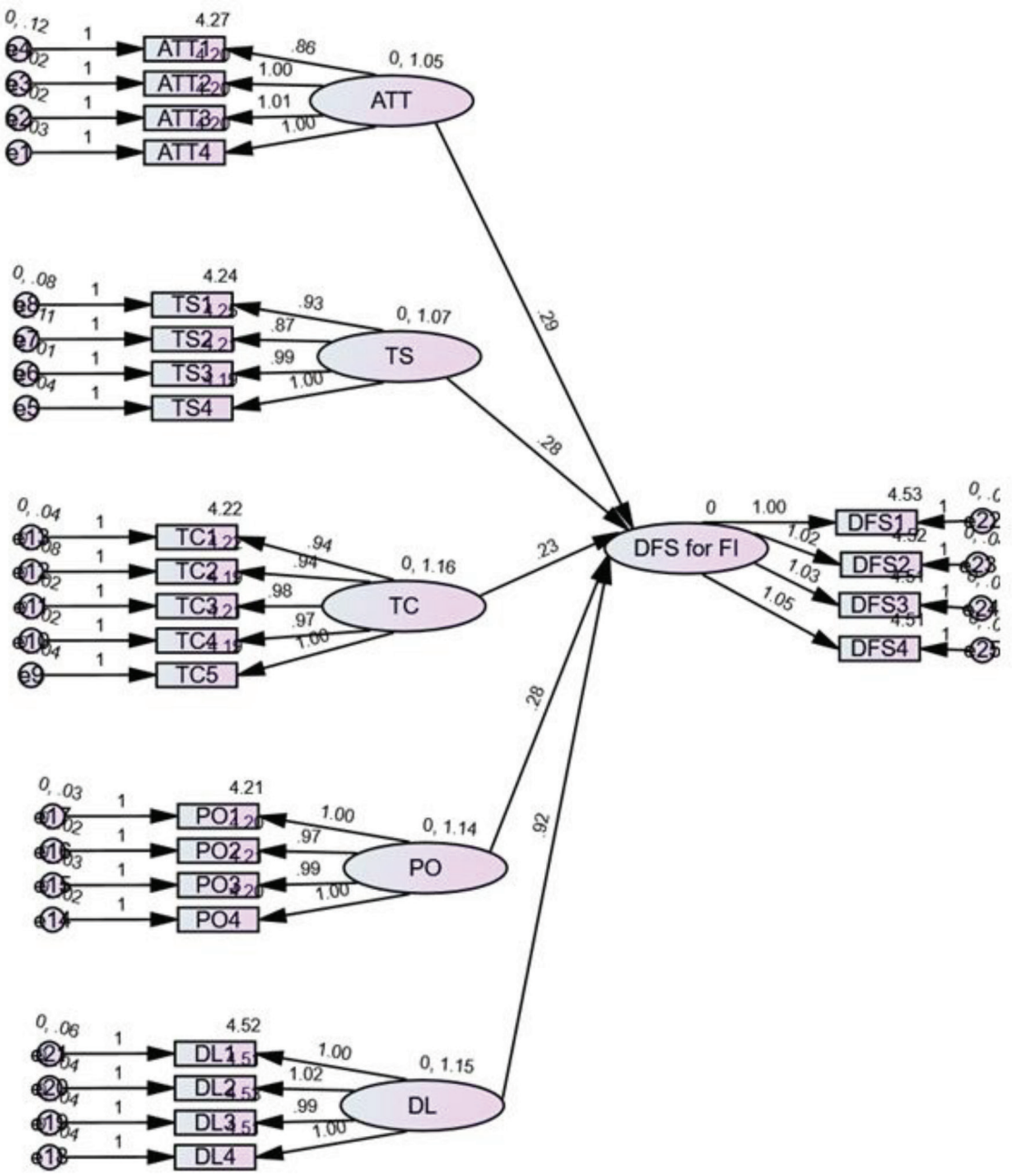

Figure 2. Structural equation model of the study.

ensuring the integrity of financial transactions, DFS can build the trust necessary to include individuals who are traditionally excluded from formal financial systems. Trust, combined with user-friendly interfaces and education, creates an environment where individuals feel empowered to leverage digital financial resources for their financial needs (Chuang *et al.*, 2016; Kim *et al.*, 2016; Olaniyi & Adeoye, 2016; Jünger & Mietzer, 2019).

The study result showed that there is an association between transaction cost and adoption of DFS. This result is in line with the previous research work (Mbiti *et al.*, 2015; Jack & Suri, 2014). Transaction costs are a critical factor in the success of DFS for financial inclusion. While they can enable cost-effective and accessible solutions, careful consideration must be given to potential barriers and challenges to ensure that the benefits are realized by a broad spectrum of society.

Table 3. Path analysis results on hypothesis testing

Hypothesis	Path	Estimate	S.E.	C. R.	P- value	Result
H1:	Adopting DFS for FI <--- ATT	.286	.006	44.010	***	Significant
H2:	Adopting DFS for FI <--- TS	.279	.007	42.778	***	Significant
H3:	Adopting DFS for FI <--- TC	.230	.006	38.129	***	Significant
H4:	Adopting DFS for FI <--- PO	.277	.006	45.326	***	Significant
H5:	Adopting DFS for FI <--- DL	.921	.011	84.848	***	Significant

SE: standard error, CR: critical ratio
Source: Survey Data

The study result proved that product offerings of DFS significantly associated with the adoption of DFS. The nature and appeal of available products can significantly influence user behaviour to adapt to the DFS (Prathap & Khaitan, 2016; Saksonova & Kuzmina, 2017). By focusing on the diverse service portfolio, various financial inclusion initiatives, user needs, innovation, convenience, providers can create compelling products that attract and retain a diverse user base and which in turn will lead to financial inclusion.

Digital literacy is one more variable; it is significantly associated with adopting DFS for financial inclusion, which is in line with previous research results (Gautam & Rawal, 2022; Ravikumar, 2022). Digital literacy is a foundational element for the widespread adoption of DFS. By enhancing people's understanding of digital tools and financial concepts, digital literacy contributes to a more inclusive and accessible financial ecosystem. It empowers individuals to make informed decisions and utilize digital services to manage their finances effectively.

6. Conclusion, Implications and Future Research

The intersection of financial inclusion and DFS stands as a transformative force in reshaping the landscape of global finance. The symbiotic relationship between these two realms has the potential to revolutionize the way individuals, particularly those in underserved communities, access and engage with financial resources. DFS has emerged as a powerful tool in dismantling traditional barriers to financial inclusion. Through the proliferation of mobile banking, digital wallets, and innovative fintech solutions, a broader spectrum of society can now participate in the formal financial sector. This not only fosters economic empowerment on an individual level but also contributes to the overall economic development of communities and nations.

The impact of DFS extends beyond mere access, encompassing digital literacy, and risk mitigation. However, it is crucial to recognize that the journey toward financial inclusion through digital means is not without challenges. Issues such as infrastructure gaps, trust, cost and concerns regarding data security must be effectively addressed to ensure the sustainable and equitable expansion of financial services. Governments, financial institutions, and technology providers play pivotal roles in shaping the future of financial inclusion. Collaborative efforts are essential to create an environment that fosters innovation, protects user interests, and addresses the diverse needs of populations around the world. Striking a balance between technological advancement and inclusive policies will be a key to harnessing the full potential of DFS.

The study on DFS and financial inclusion has several policy implications that can guide government, regulators, digital service providers, law enforcement agencies and financial institutions in shaping effective strategies. These insights are crucial for formulating strategies that effectively address the current obstacles hindering inclusive financial growth. The study provides necessary inputs to the government to invest in digital infrastructure to expand the reach of DFS to remote and underserved areas. Regulatory frameworks should be updated to foster innovation while ensuring the security and protection of users. The paper provides insights into the digital service providers and financial institutions to implement customer protection

policies and mechanisms for dispute resolution and compensation. The result of the study will help governments, financial institutions, fintech firms and other stakeholders to have public-private partnerships that can drive innovation, reduce costs, and expand the impact of DFS. The findings of the study will also add to the existing literature on DFS and financial inclusion in developing countries.

In developing countries such as India, a substantial portion of the population perceives limited financial access as a significant impediment to progress. The outcomes of the present study inform the public about the availability of benefits such as cost-effectiveness, products and innovation, security, accessible savings, micro credits etc. The inclusive development of the financial sector makes supplementary contributions by drawing more people into the economic fold and, in turn, facilitates the development of rural areas. By addressing these policy implications, governments and regulators can create an enabling environment for the sustainable growth of DFS, ultimately contributing to greater financial inclusion and economic development.

The present study recognizes certain limitations that open avenues for future research. The present empirical study is cross-sectional, to avoid bias proper measures are taken in research planning and data gathering. The researcher can conduct longitudinal studies to track the evolution of DFS and their impact on financial inclusion over an extended period. This study is focused on a specific geographic region, and as such, the findings may not be fully representative of the diverse contexts in which DFS are adopted for financial inclusion. Future research should consider expanding the scope to encompass a more extensive and varied population. The demographic variables are one of the important aspects that can be considered in future studies to investigate the broader role of socio-economic factors impact on digital financial inclusion, including its effects on poverty alleviation, economic empowerment, and overall societal well-being. By addressing these limitations and exploring these avenues for future research, scholars can contribute to a more comprehensive understanding of the adoption of DFS for financial inclusion and its implications for diverse populations.

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