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South Asian Journal of Management Research (SAJMR)

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Editorial Note

South Asian Journal of Management Research (SAJMR), is a scholarly journal that publishes scientific research on the theory and practice of management. All management, computer science, environmental science related issues relating to strategy, entrepreneurship, innovation, technology, and organizations are covered by the journal, along with all business-related functional areas like accounting, finance, information systems, marketing, and operations. The research presented in these articles contributes to our understanding of critical issues and offers valuable insights for policymakers, practitioners, and researchers. Authors are invited to publish novel, original, empirical, and high quality research work pertaining to the recent developments & practices in all areas and disciplined.

Cross-functional, multidisciplinary research that reflects the diversity of the management science professions is also encouraged, the articles are generally based on the core disciplines of computer science, economics, environmental science, mathematics, psychology, sociology, and statistics. The journal's focus includes managerial issues in a variety of organizational contexts, including for profit and nonprofit businesses, organizations from the public and private sectors, and formal and informal networks of people. Theoretical, experimental (in the field or the lab), and empirical contributions are all welcome. The journal will continue to disseminate knowledge and publish high-quality research so that we may all benefit from it.

Dr. Pooja M. Patil
Editor

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C O N T E N T S

Factors Influencing Digital Financial Inclusion in India: Evidence from the Global Findex Database

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Abstract
This exploration delves into the pivotal determinants influencing digital financial inclusion (DFI) in India, with a particular emphasis on the role of demographic indicators in shaping both access to and utilization of DFI services. Drawing upon data from the World Bank's Global Financial Inclusion (Global Findex) database, the study identifies fundamental metrics that drive financial inclusion within the Indian landscape. It scrutinizes the interplay between demographic attributes—notably genders, age, income, educational attainment, and professional standing—and the accessibility and adoption of digital financial services. The mentioned findings underscore the profound impact of socio-demographic characteristics in determining both financial access and engagement with digital financial platforms. Notably, determinants predominantly gender, income bracket, academic credentials, socioeconomic standing, and age significantly influence the extent to which individuals embrace digital financial solutions, including mobile-based payments and online financial transactions. Furthermore, this investigation presents critical strategic perspectives for regulators and capital-related stakeholders, advocating for targeted interventions to optimize digital banking accessibility and mitigate demographic disparities pertinent to access and adoption. It accentuates the imperative of devising strategic measures to bridge service gaps, guaranteeing universal reach to digital financial ecosystems spanning multiple financial strata.

Keywords: Digital Financial Inclusion (DFI); Financial Services; Global Findex; Socio- Demographic Factors; Digital Economy.

JEL Codes: G21; G28; O33; D14; O16; E42

Introduction

The contemporary global imperative is to drive social transformation through technological innovation, effectively bridging disparities in access to digital services. As outlined by the United Nations Development Programme (UNDP) Sustainable Development Goals (SDGs), despite notable advancements, over 4 billion people worldwide continue to lack internet connectivity, with a staggering 90% concentrated in developing nations. Addressing this digital disparity is imperative to ensuring equitable access to digital services, with digital financial inclusion serving as a cornerstone in this transformative endeavor. Inclusive growth Relies heavily on the synergy of financial, industrial, and societal revolutions driven through progress in cutting-edge innovations.

The proliferation of virtual systems has profoundly reshaped the banking and financial sectors in developing economies, catalyzing economic expansion and enhancing accessibility. This contemporary period is defined by swift innovation-based evolution, driving simultaneously social and financial transformation while empowering individuals with critical insights into emerging innovations. Furthermore, the seamless integration of digital tools within financial services elevates overall living standards and fosters greater social inclusion.

To serve a growing customer base, both banks and non-banking financial institutions are increasingly utilizing mobile phones and other digital platforms to deliver financial services. These initiatives align with broader digital financial inclusion objectives, bringing significant benefits to underserved populations. The incorporation of digital technology not only addresses financial disparities but also lays the groundwork for sustainable economic and social progress in the digital age.

Over time, India's financial services sector has experienced a profound metamorphosis, driven by technological advancements. Financial institutions have pioneered an array of innovative products and services, harnessing sophisticated digital channels to enhance customer engagement. A pivotal breakthrough in this evolution has been the integration of agile payment solutions and frictionless availability of monetary solutions via digital platforms, including smartphone-based financial management, internet banking, as well as bank-issued cards. The growing use of smartphone-enabled payment applications has further enhanced the ease of reaching mobile banking solutions, enabling customers for the purpose of conducting financial transactions at their convenience, including transactions, invoicing, as well as online shopping.

This particular Government pertaining to India (GoI) has served a pivotal role in this transition by implementing technology-driven policies to establish India as a digitally advanced economy. The

demonetization initiative represented a transformative milestone, propelling the expeditious proliferation of electronic financial ecosystems, encompassing debit/credit cards, virtual wallets, web-based banking, as well as an array of technology- driven transaction frameworks.
Under the 'Digital India' initiative, the government aims to shift the nation toward a less cash- dependent economy, encouraging digital transactions and promoting financial inclusion through cashless systems.
The success of cashless transactions hinges on the effective implementation of DFI strategies. This study is organized as follows: the introduction is followed by a detailed literature review in both global and Indian contexts in the second section. The third section identifies the research gap and outlines the objectives. Section four presents the research model and theoretical propositions, while the fifth division elaborates on the investigative framework. The sixth segment analyzes the empirical evidence, discussing findings as well as implications. Ultimately, the research wraps up by presenting recommendations aimed at decision-makers in order to support India's journey toward achieving its digital economy objectives.

Literature Review

This section provides an in-depth analysis of DFI by evaluating its determinants and impact from both global & Indian perspectives. Various studies have emphasized the role of financial technology (FinTech) in expanding financial access and bridging economic disparities (Demirguc-Kunt et al., 2018). Digital tools such as mobile banking, internet banking, and digital wallets have emerged as essential components of financial accessibility (Arner et al., 2020). However, despite the advancements, challenges related to digital literacy, financial awareness, and socio-economic factors continue to hinder comprehensive financial inclusion (Ozili, 2021).

Global Perspective on DFI

Global research has emphasized the crucial role of FinTech in advancing financial inclusion (Beck et al., 2018). Studies indicate that digital financial services have significantly contributed to economic engagement, particularly in developing countries (Allen et al., 2016). Mobile payment solutions, such as Kenya's M-Pesa, have illustrated how digital platforms facilitate financial access for unbanked communities (Jack & Suri, 2014).
Similarly, in China, government-supported digital payment programs have played a vital role in improving financial participation, minimizing cash dependency, and optimizing transaction efficiency (Chen & Qian, 2020).
Financial literacy has also been identified as a crucial enabler of digital financial services (Lusardi & Mitchell, 2014). Studies suggest that individuals with higher levels of education are more likely to engage in digital transactions. Moreover, income disparity plays a critical role, as high-income groups tend to exhibit greater adoption of digital financial services than lower-income populations (Klapper et al., 2019). Policymakers worldwide have implemented financial literacy programs to improve digital engagement and enhance financial inclusion (Cole et al., 2011).

Indian Perspective on Digital Financial Inclusion

In India, DFI has gained substantial momentum, driven by state-led initiatives such as the Pradhan Mantri Jan Dhan Yojana (PMJDY) and the Unified Payments Interface (UPI) (Raghuram, 2019). These programs have significantly contributed to expanding financial access, especially in rural and semi-urban areas. Studies indicate that individuals with bank accounts under PMJDY are more likely to use digital financial services, thereby promoting cashless transactions (Agarwal & Chauhan, 2020).
Demonetization in 2016 further accelerated digital financial adoption, compelling businesses and consumers to embrace digital payments (Suri & Sharma, 2018). Research findings reveal that high-income and urban populations adapted more swiftly to digital platforms, whereas rural communities faced challenges due to limited access to internet services and smartphones (Mehta & Singh, 2019). However, initiatives such as the BharatNet project aim to improve internet penetration in remote areas, bridging the urban-rural digital divide (Government of India, 2021).
gender disparities in financial inclusion persist as a pressing issue in India (Bhanot et al., 2012). Research underscores that women in rural regions encounter substantial obstacles in accessing digital financial services, primarily due to lower educational attainment and restricted financial autonomy (Chakrabarty, 2019). Targeted digital literacy programs and financial inclusion schemes tailored for women have been suggested to bridge this gap (Desai et al., 2020).

Barriers and Challenges in DFI

Despite the progress, hinderances such as cybersecurity risks, lack of awareness, and technological barriers continue to impede DFI (Zhu & Li, 2020). Concerns about data privacy and cyber fraud deter individuals from fully adopting digital payment methods (Patil et al., 2021). Additionally, inadequate digital infrastructure in certain regions limits the accessibility of financial services, reinforcing economic disparities (Singh & Ghosh, 2021).

To address these challenges, key participants, encompassing banking entities, policymakers, and digital solution enablers, must operate collaboratively in order to enhance digital literacy, strengthen cybersecurity measures, and expand access (Mohan & Khera, 2020). Efforts should also focus on developing user-friendly digital platforms that cater to diverse socio- economic segments (Roy & Basu, 2021).

The literature review highlights the groundbreaking potential of DFS in fostering economic inclusion. While DFI has made major breakthroughs globally and in India, persistent challenges necessitate targeted interventions. Addressing digital literacy gaps, improving technological infrastructure, and implementing inclusive financial policies will be crucial in achieving a more equitable financial ecosystem. The insights from this literature review provide a foundation for further research on optimizing digital financial services to maximize their impact on economic growth and social inclusion.

Research Gap

A meticulous synthesis of extant literature on DFI underscores prevailing research lacunae necessitating deeper inquiry. While a plethora of scholarly works have scrutinized the instrumental role of financial technology and digital payment ecosystems in augmenting financial accessibility, a conspicuous dearth of research exists on the nuanced interplay between demographic and socio-economic determinants shaping its adoption within emerging economies such as India (Demirguc-Kunt et al., 2018). Contemporary scholarly discourse primarily emphasizes the proliferation of banking infrastructure and the accessibility of formal credit, frequently marginalizing the revolutionary impact of digital financial instruments—such as mobile banking, digital wallets, and online financial transactions—as a secondary consideration (Klapper et al., 2019).

Notwithstanding the escalating proliferation of digital financial solutions, entrenched disparities persist, exacerbated by heterogeneities in financial literacy, technological penetration, and regional economic asymmetries. Scholarly investigations have been disproportionately skewed towards urban financial behaviors, leaving the rural financial inclusion paradigm inadequately explored. A critical research imperative lies in evaluating the ramifications of digital financial services on marginalized rural demographics,

particularly within the ambit of government-led initiatives such as the PMJDY and the UPI (Agarwal & Chauhan, 2020).

Moreover, gender asymmetries in financial inclusion necessitate rigorous academic interrogation. Empirical evidence suggests that women—especially in rural and socio- economically disadvantaged settings—encounter formidable impediments in accessing digital financial services, predominantly due to entrenched socio-cultural and economic constraints (Bhanot et al., 2012). Nevertheless, a paucity of empirical research critically evaluates the efficacy of policy frameworks designed to attenuate the gender divide in financial accessibility (Chakrabarty, 2019). A systematic investigation is warranted to assess the extent to which digital literacy interventions and targeted financial incentives can catalyze women's active participation in the digital economy.

Another pivotal research void pertains to the ramifications of cybersecurity vulnerabilities on financial inclusivity. Empirical studies reveal that pervasive security apprehensions, trust deficits, and anxieties surrounding digital fraud constitute significant deterrents to the pervasive utilization of digital financial systems (Patil et al., 2021). However, an empirical deficit persists concerning the effectiveness of cybersecurity governance mechanisms and financial literacy initiatives in mitigating these apprehensions (Zhu & Li, 2020). Bridging these epistemological gaps is imperative for formulating robust digital financial policies that fortify equitable access while fostering sustainable economic integration.

In summation, there exists a compelling need for holistic research that interrogates DFI through a multidimensional lens, integrating demographic, technological, and policy-driven perspectives. Future scholarship must delve into pioneering financial inclusion frameworks that synergize digital innovation with contextualized socio-economic realities, thereby ensuring that financial democratization initiatives remain both efficacious and enduring across heterogeneous economic landscapes.

Research Objectives

- To examine the key drivers of DFI by leveraging data from the World Bank's Global Findex database, with a distinct focus on DFS.
- To examine the interplay between DFI and various demographic attributes, assessing their influence on financial accessibility and engagement.
- To assess the ease of access & utilization of DFS in pertaining to key demographic characteristics within both the Indian and global contexts, identifying critical barriers and facilitating factors.
- To bridge the existing research gap on DFI in developing economies by analyzing the role of demographic determinants in shaping access to and adoption of digital financial services.

Research Model and Hypotheses

The conceptual framework formulated in this study is predicated upon an exhaustive synthesis of extant literature and the foundational theoretical constructs of digital financial inclusion. This sophisticated model scrutinizes the ramifications of diverse demographic and economic determinants on financial accessibility, with a pronounced focus on the proliferation of digital financial services. It integrates pivotal exogenous variables, including chronological age, gender classification, socioeconomic stratification, educational attainment, and occupational status. Concurrently, the endogenous variables encompass the ease of access and utilization of digital financial mechanisms.

The study proposes two primary hypotheses:

H1: Demographic variables significantly impact the accessibility of DFI. H2:

Demographic variables significantly affect the usage of DFI.

These postulations shall undergo rigorous validation through empirical analysis, scrutinizing the extent to which exogenous variables shape the paradigm of digital financial inclusion. The conceptual framework is meticulously architected to encapsulate both the overt and latent ramifications of demographic determinants, elucidating pathways for augmenting digital financial services to catalyze equitable economic expansion.

By dissecting these theoretical assertions, this inquiry endeavors to enrich the intellectual discourse on financial inclusion while furnishing policymakers with nuanced insights into pivotal domains necessitating strategic intervention. The resultant findings shall serve as a cornerstone for formulating sophisticated digital financial policies tailored to the heterogeneous exigencies of the populace, concurrently fortifying the longevity and efficacy of financial inclusion mechanisms.

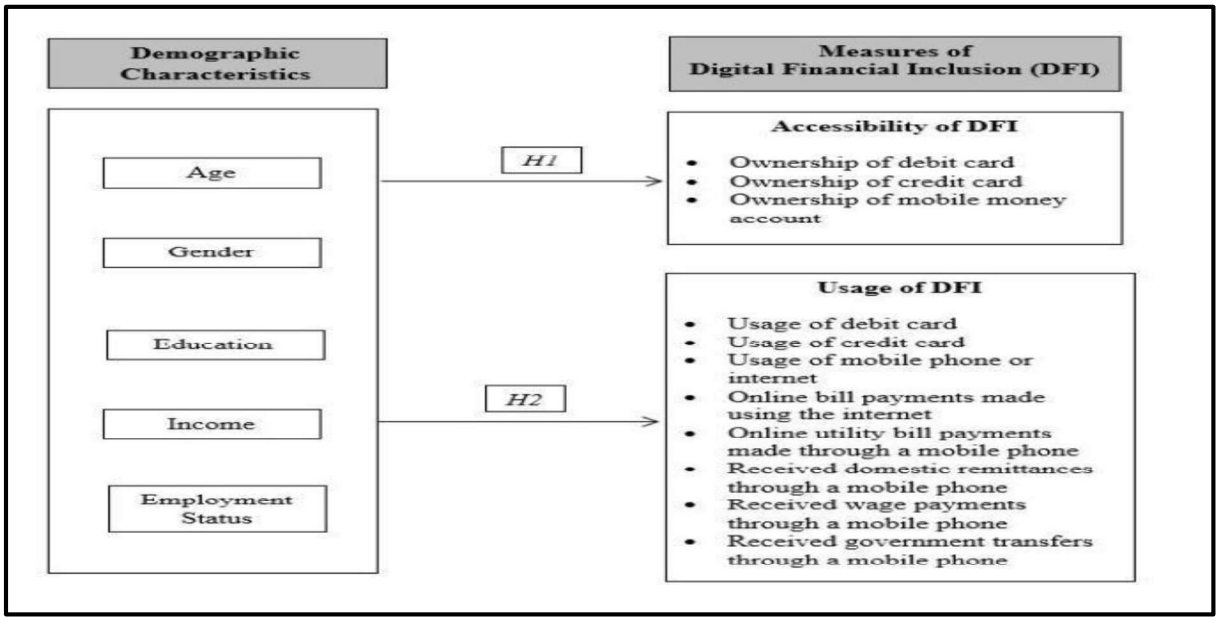

Figure 1
The proposed research model

Methodology and Data Framework

This research leverages secondary datasets procured from the World Bank's Global Findex Database for the fiscal years 2014, 2017, and 2021, as these constitute the latest available records. The methodological framework meticulously delineates the data provenance, the construct measurement paradigm, and the deployment of the probit regression model for empirical analysis.

Data Sources

The demographic and DFI metrics were meticulously sourced from the World Bank's Global Findex Database**,** an esteemed repository of financial access indicators. The data collection process was orchestrated by Gallup, a preeminent U.S.-based analytics and advisory institution, ensuring methodological rigor and representational accuracy. This extensive global survey spanned 144 nations, encompassing a robust sample of approximately 150,000 respondents worldwide. Specifically for India, a stratified sample of 3,000 individuals was employed, ensuring the comprehensive representation of key study variables.

Measurement of Constructs

The research classifies constructs into two overarching domains: demographic attributes & DFI indicators.

As per the World Bank Global Findex framework, the demographic parameters scrutinized in this analysis include:

- gender: Bifurcated into male and female categories.
- Age: Treated as a continuous variable, quantified in absolute years.
- Income: Stratified into five quantiles, with each further subdivided into two distinct tiers.
- Educational Attainment: Categorized into three hierarchical levels, each subsequently divided into two sub-groups for granular differentiation.
- Employment Status: Classified into two dichotomous groups—'employed' and 'not in the workforce.'

Furthermore, the study meticulously evaluates eleven pivotal indicators reflecting the spectrum of digital financial inclusion, encompassing both financial accessibility and transactional utility:

- Holding a debit card
- Holding a credit card
- Having a mobile money account
- Using a debit card for transactions
- Utilization of a credit card for transactions
- Engagement with mobile phone or internet-based banking services
- Execution of online bill payments
- Settlement of utility expenses via mobile-based platforms
- Receipt of domestic remittances through mobile financial channels
- Disbursement of wage payments through mobile transactions
- Government benefit transfers received via mobile-based financial instruments

For analytical coherence, these eleven indicators are systematically consolidated into two principal dimensions:

- Accessibility: Encompassing debit card ownership, credit card possession, and mobile money account enrollment.
- Use: Comprising the remaining eight variables, encapsulating financial transactions and digital payment behaviors.

This comprehensive methodological approach ensures a robust empirical foundation, facilitating a nuanced exploration of digital financial inclusion and its demographic determinants.

Table 1: Description and measurement of study variables

S. No.	Variable	Measurement
1	Gender	Male = 0; Female = 1
2	Age	Age in number of years
3	Income=poorest 20%	Income in the first income quintile = 1; Otherwise = 0
4	Income=second 20%	Income in the second income quintile = 1; Otherwise = 0
5	Income=middle 20%	Income in the middle-income quintile = 1; Otherwise = 0
6	Income=fourth 20%	Income in the fourth income quintile = 1; Otherwise = 0
7	Income=richest 20%	Income in the richest income quintile = 1; Otherwise = 0
8	Primary education	If the individual has completed primary or less = 1; Otherwise = 0
9	Secondary education	If the individual has completed secondary education = 1; Otherwise = 0
10	Tertiary education	If the individual has completed tertiary education = 1; Otherwise = 0
11	Employment status	If the individual is in the workforce = 1; Out of workforce = 0
Dependent Variables (Digital Financial Inclusion Indicators)		
1	ACC1 Ownership of debit card	'Yes' = 1; 'No' = 0
2	ACC2 Ownership of credit card	'Yes' = 1; 'No' = 0
3	ACC3 Ownership of mobile money account	'Yes' = 1; 'No' = 0
4	USG1 Usage of debit card	'Yes' = 1; 'No' = 0
5	USG2 Usage of credit card	'Yes' = 1; 'No' = 0
6	USG3 Usage of mobile phone or internet	'Yes' = 1; 'No' = 0
7	USG4 Online bill payments made using the internet	'Yes' = 1; 'No' = 0
8	USG5 Online utility bill payments made through a mobile phone	'Yes' = 1; 'No' = 0
9	USG6 Received domestic remittances through a mobile phone	'Yes' = 1; 'No' = 0
10	USG7 Received wage payments through a mobile phone	'Yes' = 1; 'No' = 0
11	USG8 Received government transfers through a mobile phone	'Yes' = 1; 'No' = 0

Source: World Bank Findex Database 2021

In this research, demographic attributes function as exogenous variables, while determinants pertaining to DFI operate as endogenous variables. An exhaustive elucidation of the quantification methodology for the five exogenous and eleven endogenous variables is meticulously delineated in Table 1. Additionally, Table 2 furnishes a comprehensive overview of the demographic profile of respondents, whereas Table 3 encapsulates the descriptive statistical parameters pertinent to DFI.

Table 2: Demographic profile of respondents

Variable	No. of observations	Mean
Female	3000	0.52
Age	3000	37.44
Income = poorest 20%	3000	0.18
Income = second 20%	3000	0.20
Income = middle 20%	3000	0.20
Income = fourth 20%	3000	0.20
Income = richest 20%	3000	0.22
Primary education	2991	0.66
Secondary education	2991	0.28
Tertiary education	2991	0.06
Employment	3000	56.2

Source: World Bank Findex Database 2021

Table 3: Descriptive statistics for the dependent variables

Code	Variable	No. of observations	Mean
Accessibility			
ACC1	Ownership of debit card	2980	0.316
ACC2	Ownership of credit card	2918	0.030
ACC3	Ownership of mobile money account	3000	0.022
Usage			
USG1	Used debit card in past 12 months	844	0.391
USG2	Used credit card in past 12 months	88	0.739
USG3	Used mobile phone or internet in past 12 months to make payment	2224	0.065
USG4	Made bill payments online using the internet	2942	0.027
USG5	Paid utility bills through a mobile phone	1288	0.036
USG6	Received domestic remittances through a mobile phone	463	0.026
USG7	Received wage payments through a mobile phone	628	0.025
USG8	Received government transfers through a mobile phone	385	0.031

Source: World Bank Findex Database 2021

Probit Regression Equation Modeling

In this study, the dependent variable exhibits a binary structure, rendering it amenable to predictive modeling through a probit regression framework. As a result, Predictive modeling through a binary choice regression framework. As a result, a binary choice regression model is rigorously designed and applied to assess the eleven primary factors shaping DFI.

Let Y represent digital financial inclusion (DFI), measured through 11 critical indicators outlined in Table 1. Consequently, eleven discrete probit regression equations are systematically formulated and empirically analyzed using Student Version of EViews 11 to generate statistically sound insights.

Data Analysis, Empirical Findings, and Interpretations

This research leverages data sourced from the World Bank Index Database and employs a probit regression model as the principal analytical tool. The discourse is structured around two fundamental dimensions: accessibility and utilization of digital financial services.

Demographic Determinants of 'Accessibility' in DFI.

The probit regression analysis, which provides an in-depth examination of the influence of demographic factors on access to DFI, is meticulously detailed in Table 4. In this econometric specification, accessibility is

designated as the dependent variable, operationalized through three pivotal indicators: debit card ownership, credit card ownership, and mobile money account possession.

A multitude of demographic determinants exerts a statistically significant influence on debit and credit card ownership. Notably, age, a dummy variable encapsulating age cohorts, income strata (specifically the third and fourth quintiles), educational attainment (at the secondary and tertiary levels), and employment status emerge as critical explanatory variables.

Furthermore, gender —specifically female identity—coupled with age exerts a significant influence on the likelihood of possessing a mobile money account. Income disparities are instrumental in shaping digital financial accessibility, as evidenced by the strong statistical association between mobile money account possession and income-based dummy variables. Among these, the second income quintile emerges as the most consequential determinant, given its pronounced coefficient magnitude.

Moreover, an individual's scholarly qualifications exert a profound influence on digital financial account possession. The impact of intermediate and advanced education is markedly positive, with the propensity for ownership intensifying in tandem with educational progression. Individuals with tertiary education exhibit a markedly higher propensity for owning a mobile money account compared to those with only secondary-level qualifications. These empirical findings are consistent with the seminal work of Dar and Ahmed (2020), who underscored the pivotal role of advanced educational attainment in accelerating the adoption of digital payment systems. Their study corroborates that heightened financial literacy, facilitated through formal education, fosters greater engagement with digital financial services, thereby fortifying financial inclusion.

This empirical foundation substantiates the notion that education acts as a pivotal driver in augmenting the adoption and integration of digital financial tools within everyday economic activities, thereby advancing the overarching objectives of financial inclusion and economic empowerment.

Table 4. Drivers for access of DFI in India

Variables	Ownership of debit card	Ownership of credit card	Ownership of mobile money account
Female	0.021 (0.080)	-0.005 (0.219)	-0.817*** (0.278)
Age			
Age	-0.004*** (0.052)	-0.205*** (0.126)	0.124 (0.145)
Age^2	0.045*** (0.095)	-0.480*** (0.299)	0.320** (0.335)
Income			
Income-poorest 20%	-0.156 (0.127)	0.539 (0.351)	2.124*** (0.531)
Income-second 20%	-0.140 (0.123)	0.385 (0.354)	2.155*** (0.532)
Income-third 20%	-0.168** (0.122)	0.417** (0.349)	1.723*** (0.416)
Income-fourth 20%	0.016** (0.112)	0.045** (0.377)	1.581*** (0.393)
Education			
Secondary education	-0.00272	0.464 (0.601)	1.224*** (0.353)
Tertiary education	-0.289** (0.176)	0.694* (0.616)	1.392*** (0.390)
Employment	-0.047** (0.523)	-0.048** (0.102)	-0.016 (0.124)
Observations	2,980	2,918	2,991
Pseudo R^2	0.004	0.002	0.021
Log likelihood	-3709.431	-784.053	-556.237

Note:

- The dependent variable is prominently displayed at the header of each column.
- The explanatory variables encompass gender, age, income level, educational attainment, and employment status.
- The computed marginal effects, along with their corresponding standard errors, are presented within parentheses.
- * Denotes significance at the 1% level, denotes significance at the 5% level, and * denotes significance at the 10% level.

Source: Authors own compilation

Usage Patterns of DFS

The adoption of digital financial services demonstrates significant divergence depending on individuals' socio-demographic traits. Table 5 illustrates the complex relationship between personal attributes and the engagement with digital financial tools, including debit cards, credit cards, and transactions enabled via mobile or internet platforms. Income emerges as a pivotal determinant in debit card adoption, with the binary variables corresponding to the first- and third-income quintiles identified as critical influencers. This implies a proportional relationship wherein higher income levels correspond with an increased propensity for frequent debit card usage.

Furthermore, educational attainment exerts a profound influence, as individuals possessing secondary and tertiary education demonstrate an elevated likelihood of engaging in debit card transactions. Similarly, employment status constitutes a decisive factor in determining debit card utilization. With regard to credit card adoption, the first and fourth income quintiles surface as predominant determinants, alongside employment status. However, other demographic parameters do not manifest a statistically significant impact on credit card usage. In the realm of mobile and internet-driven financial transactions, primary determinants encompass affiliation with the third income quintile, possession of advanced educational qualifications, and active employment. These empirical findings corroborate prior scholarly inquiries undertaken by Mehta et al. (2012), Chaudhary and Nair (2020), Kapoor and Sinha (2013), Pillai et al. (2014), Singh and Verma (2016), and Jain and Roy (2015).

Influence of Demographics on Digital Payments

Overall, individuals with higher incomes and advanced educational backgrounds are more likely to use debit and credit cards for digital financial transactions. Those with higher education levels also tend to engage more frequently with specific brands and prefer online purchases.Demographic characteristics significantly influence the likelihood of making online payments. Table 5 delineates the principal determinants influencing digital payment adoption, with a particular emphasis on transactions conducted through mobile devices or the internet. Factors such as age, the upper-middle and higher-income quintiles, and employment status play a crucial role in influencing participation in mobile and internet-enabled financial transactions. Older individuals, along with those belonging to higher income strata, demonstrate a heightened propensity for utilizing digital payment methods via mobile platforms, whereas other demographic attributes exhibit no significant effect. These findings align with the research of Sharma (2010) and Chaudhary & Nair (2020), which indicate that older individuals and those in higher income brackets exhibit a preference for utilizing mobile phones to settle utility bills. Regarding internet-based digital payments, educational attainment and employment status play a pivotal role in shaping participation. This conclusion corroborates the studies by Pillai et al. (2016) and Sen et al. (2007), which highlight the favourable impact of income levels and employment status on accessibility to financial services. The results imply that stable employment, a consistent income stream, and familiarity with online transactions collectively facilitate a higher propensity for engaging in digital bill payments.

Demographic Influence on Digital Receipts

Table 5 elucidates the intricate interplay between demographic variables and various modalities of digital financial receipts, encompassing domestic remittances, wage disbursements, and governmental transfers facilitated through mobile technology. Regarding wage compensations processed via mobile platforms, income stratification emerges as a pivotal determinant. Individuals positioned within the second and third income quintiles exhibit a heightened propensity to receive wages through digital payment mechanisms. Furthermore, educational attainment exerts a profound influence, with secondary education serving as a particularly salient catalyst. Employment status further amplifies the probability of wage receipt through mobile-based financial channels. In the context of government disbursements administered via mobile phones, age constitutes a principal determinant. Conversely, demographic variables do not exert a statistically significant influence on the reception of domestic remittances through mobile transactions, as all related indicators remain negligible in their predictive capacity. These empirical findings corroborate the scholarly contributions of Gupta and Rao (2020), Sharma and Iyer (2016), and Banerjee and Nair (2015), underscoring that individuals of advanced age, those with elevated income levels, and those possessing secondary education exhibit a greater proclivity toward engaging in digital financial receipt transactions. Specifically, older individuals are frequently eligible for government-sponsored entitlements, including pensions and social security disbursements, which are increasingly administered through mobile-based financial platforms. Similarly, individuals with superior income brackets and higher educational credentials demonstrate a pronounced inclination toward receiving wage payments through mobile channels, thereby fostering deeper integration into digital financial ecosystems.

Policy Implications and Recommendations

The study provides key insights for service providers and policymakers in advancing the Digital India initiative, with a focus on developing a 'Faceless, Paperless, and Cashless' ecosystem.

Recommendations for Service Providers

To enhance accessibility to DFS, particularly in underserved areas, service providers should prioritize investments in digital infrastructure. Creating user-friendly platforms tailored for individuals with varying levels of technological proficiency is essential. Ensuring that digital tools are intuitive and accessible to all demographic groups, including the elderly and those with limited education, can enhance adoption.

Given the growing reliance on mobile phones for digital transactions, particularly among lower-income groups, service providers should focus on mobile-first solutions. Additionally, implementing digital literacy programs can empower users to navigate financial platforms confidently.

Service providers should collaborate with government agencies to streamline the digital disbursement of public services, such as wage payments, remittances, and government transfers. Strengthening cybersecurity measures is crucial to addressing concerns about privacy and security, which often discourage users from fully adopting digital financial services.

Finally, offering tailored financial products that cater to diverse income groups and education levels will ensure inclusivity and equitable access to digital financial services.

Variables	Debit Card Usage (1)	Credit Card Usage (2)	Mobile/Internet Usage (3)	Online Bill Payments via Internet (4)	Utility Bill Payments via Mobile (5)	Domestic Remittances Received via Mobile (6)	Wage Payments Received via Mobile (7)	Government Transfers Received via Mobile (8)
Female	0.032 (0.145)	0.102 (0.576)	-0.128 (0.230)	-0.304 (0.304)	-0.138 (0.613)	-0.204 (0.529)	0.228 (0.529)	0.732 (0.636)
Age								
Age	-0.063 (0.112)	-0.215 (0.541)	0.050 (0.997)	0.064 (0.113)	0.337 (0.147)	0.406 (0.287)	-0.061 (0.270)	0.507 (0.288)
Age^2	-0.108 (0.182)	-0.434 (0.879)	0.153 (0.207)	0.263 (0.263)	0.822*** (0.317)	0.924 (0.287)	-0.187 (0.613)	1.048* (0.614)

Variables	Debit Card Usage (1)	Credit Card Usage (2)	Mobile/Internet Usage (3)	Online Bill Payments via Internet (4)	Utility Bill Payments via Mobile (5)	Domestic Remittances Received via Mobile (6)	Wage Payments Received via Mobile (7)	Government Transfers Received via Mobile (8)
Income								
Lowest 20% Income	-0.664 (0.262)	-2.073 (0.849)	-0.095 (0.293)	-0.391 (0.384)	-0.501 (0.624)	0.952 (1.248)	1.230 (1.249)	0.842 (0.841)
Second 20% Income	-0.147 (0.227)	-1.341 (0.854)	0.034 (0.230)	0.025 (0.339)	0.005 (0.489)	2.156** (1.143)	0.486 (0.818)	-0.950 (1.181)
Middle 20% Income	-0.385** (0.185)	-1.265*** (0.800)	0.203** (0.264)	-0.018** (0.348)	0.348** (0.456)	1.160 (1.200)	2.093** (1.187)	-0.778 (1.187)
Fourth 20% Income	-0.284** (0.198)	-1.188*** (0.845)	0.273** (0.262)	0.013** (0.348)	0.682** (0.450)	1.668 (1.300)	1.023 (1.241)	-0.950 (1.181)
Education								
Secondary Education	-0.433* (0.261)	-1.275 (1.202)	-0.042 (0.366)	-0.279 (0.447)	-0.233 (0.509)	-0.814 (0.882)	-2.204*** (0.702)	18.791 (13.880)
Tertiary Education	-0.169* (0.264)	-0.267 (1.278)	0.384 (0.261)	0.001 (0.547)	-0.713 (0.509)	-1.043 (0.596)	-1.324 (0.569)	19.617 (13.881)
Employment Status	-0.040** (0.098)	-0.633** (0.401)	-0.068** (0.074)	0.174 (0.145)	0.001 (0.145)	0.342 (0.107)	0.077* (0.250)	-0.419 (0.325)
Observations	841	88	2224	2942	1288	463	628	385
Pseudo R^2	0.013	0.005	0.006	0.011	0.006	0.020	0.006	0.015
Log Likelihood	-1113.562	-86.956	-1065.810	-737.569	-396.581	-108.229	-138.684	-101.010

Note:

- The dependent variable is prominently displayed at the header of each column.
- The explanatory variables include gender, age, income level, educational attainment, and employment status.
- The computed marginal effects, along with their corresponding standard errors, are presented in parentheses.
- Statistical significance is denoted as follows: * indicates significance at the 1% level, at the 5% level, and * at the 10% level.

Source: Authors own compilation

Recommendations to policymakers

To ensure fair and widespread access to digital financial services, policymakers should prioritize the development of a robust digital framework, particularly in remote and economically marginalized areas. This can be accomplished through enhancing internet connectivity, offering affordable data plans, and ensuring digital platforms are user-friendly for individuals with different levels of technological proficiency. Additionally, launching digital literacy initiatives is essential to equip individuals—particularly marginalized groups such as low-income communities and the elderly—with the necessary skills to engage confidently with digital financial systems.

Collaboration between government agencies, financial institutions, and technology providers should be encouraged to develop an integrated, efficient digital ecosystem that supports financial transactions, government transfers, and digital payments. Furthermore, implementing regulations to enhance cybersecurity and protect user data is crucial in building public trust in digital financial platforms. Providing incentives for financial service providers to create affordable and easy-to-use digital products can further accelerate adoption. Lastly, targeted programs that cater to different income levels and education groups can strengthen financial inclusion, ultimately fostering a more accessible and cashless economy.

Conclusion

This analysis highlights the essential significance of demographic elements in shaping the acceptance and availability of digital financial solutions. Key aspects such as earnings level, educational attainment, age, and employment status exert a profound influence on individuals' engagement with digital financial instruments, including debit and credit cards, mobile banking, and online payment platforms.

As India progresses toward its vision of a 'Faceless, Paperless, and Cashless' economy under the Digital India initiative, efforts must be directed at enhancing digital infrastructure, increasing financial literacy, and ensuring equal access to digital financial platforms.

Bridging the digital divide through secure, inclusive, and user-friendly financial services will empower individuals to participate more actively in the digital economy. Achieving this goal will necessitate a coordinated strategy from policymakers, financial entities, tech suppliers, and other key players to advance economic inclusion and foster enduring progress throughout the nation.

Declaration of Interest Statement

Declaration of Interest

The authors declare that there are no conflicts of interest related to this research. The study, "Factors Influencing Digital Financial Inclusion in India: Evidence from the Global Findex Database," is based on publicly available data and has not been influenced by any external funding source, commercial entity, or personal relationships that could affect the integrity of the research.

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Ms. Anita conceptualized the study, conducted the data analysis, and drafted the manuscript. Dr. Parul Agarwal provided supervision, reviewed, and contributed to refining the final version of the paper. Both authors have read and approved the final manuscript.

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