

Technology Readiness, Adoption of Digital Financial Services, and Impact on Financial Well-being

Purushottam Bhandare, University of Chicago¹
Samapti Guha, Tata Institute of Social Sciences²

Introduction

The proliferation of digital financial services (DFS) has significantly transformed the financial landscape in developing economies, offering new avenues for financial inclusion and consumer welfare (Ozili, 2018). However, the adoption and impact of DFS are not uniform across all consumer segments, with individual characteristics such as technology readiness and demographic factors playing crucial roles (Parasuraman, 2000; Gomber et al., 2017). This study examines the relationships between technology readiness, DFS adoption, and financial well-being among individuals in Maharashtra, India, using primary data from 715 respondents and structural equation modeling (SEM) to analyze the interplay of these variables (Parasuraman & Colby, 2015; Hair et al., 2017).

Background and Rationale

DFS, including mobile banking, digital wallets, and Unified Payments Interface (UPI) services, have become increasingly accessible due to technological advancements and supportive regulatory frameworks (Gabor & Brooks, 2017). While these services have the potential to bridge gaps in financial inclusion, their adoption and impact are influenced by technology readiness, a measure of an individual's propensity to embrace new technologies (Parasuraman, 2000). Existing literature has primarily focused on developed markets or has not sufficiently addressed the nuanced impacts of DFS adoption on financial well-being in emerging economies (Demirgüç-Kunt et al., 2017; Singh & Srivastava, 2020).

This research addresses these gaps by exploring the influence of technology readiness on DFS adoption, assessing the moderating effects of demographic factors, and evaluating the differential impacts of DFS adoption on financial well-being across diverse consumer segments. The study is particularly timely given the acceleration of digital financial behaviors in the aftermath of demonetization and during the COVID-19 pandemic (Pal et al., 2021).

Study Objective

By investigating how digital financial inclusion impacts consumer welfare across different socioeconomic groups. By understanding the factors influencing DFS adoption and its subsequent effects on financial well-being, this study provides insights for tailoring financial services and policies to improve equity and resilience in consumer financial well-being. Specifically, this research seeks to:

1. Assess the level of technology readiness among different demographic groups using segmentation
2. Analyze the relationship between among the constructs – technology readiness, technology adoption, and financial well-being.
3. Evaluate the impact of DFS adoption on financial well-being across different socioeconomic segments.
4. Identify potential barriers to DFS adoption and their implications for financial inclusion policies.

¹ Purushottam Bhandare (purushottam.bhandare@gmail.com), Student, Harris School of Public Policy

² Samapti Guha (samapti@tiss.edu), Professor, Center of Social Entrepreneurship

Literature review

Digital Financial Services and Financial Inclusion

DFS have emerged as a powerful tool for promoting financial inclusion, especially in developing economies (Ozili, 2018). The rapid growth of DFS has been driven by technological advancements, increased mobile phone penetration, and supportive regulatory environments (Gomber et al., 2017). Financial inclusion, defined as access to and use of formal financial services by underserved populations, has been a key policy objective for many developing countries (Demirgüç-Kunt et al., 2017). DFS can overcome traditional barriers to financial inclusion, such as geographical distance and high transaction costs (Gabor & Brooks, 2017).

Technology Readiness and DFS Adoption

Technology readiness, conceptualized by Parasuraman (2000) as people's propensity to embrace and use new technologies, is measured by the Technology Readiness Index (TRI), which includes optimism, innovativeness, discomfort, and insecurity (Parasuraman & Colby, 2015). Studies have shown that technology readiness significantly influences the adoption of digital technologies, including online banking (Lin et al., 2007) and mobile banking (Roy et al., 2017).

DFS Adoption and Financial Well-being

Financial well-being encompasses both objective financial conditions and subjective perceptions of one's financial situation (Consumer Financial Protection Bureau, 2015). While DFS adoption can lead to improved financial management and increased savings (Jack & Suri, 2014), the relationship is complex and influenced by factors such as financial literacy and consumer protection (Ozili, 2018). In India, mobile banking adoption has been shown to positively influence financial well-being among urban consumers (Patil et al., 2017).

Demographic Factors and DFS Adoption

Demographic factors such as age, education, income, and location significantly influence technology adoption patterns (Asongu & Nwachukwu, 2018). For instance, age and education have been found to significantly influence mobile wallet adoption in India (Kumar et al., 2018). The COVID-19 pandemic has accelerated the adoption of DFS globally (Karjalainen et al., 2021). In India, there has been a significant increase in digital payment adoption during the pandemic (Pal et al., 2021).

Theoretical Framework

This study integrates the Technology Acceptance Model (TAM; Davis, 1989), Diffusion of Innovations Theory (Rogers, 2003), and Sen's Capability Approach (Sen, 1999) to provide a comprehensive understanding of the relationships among technology readiness, DFS adoption, and financial well-being. TAM emphasizes perceived usefulness and ease of use as determinants of technology adoption, while the Diffusion of Innovations Theory categorizes adopters based on innovativeness, aligning with technology readiness. The Capability Approach frames DFS adoption as a means to enhance financial capabilities and well-being.

Methodology

Research Design

This study employs a quantitative research design using primary data collected through a survey of 715 respondents in Maharashtra, India. The sampling strategy ensures representation across urban and rural areas, as well as different socioeconomic groups.

Data Collection

Data was collected through structured questionnaires administered both online and in-person to ensure representation across different demographic groups. The survey was conducted in local languages (Marathi and Hindi) in addition to English to ensure comprehension across diverse respondent groups.

Measures

1. Technology Readiness Index 2.0 (Parasuraman & Colby, 2015) to assess individuals' propensity to embrace new technologies.
2. Custom index to measure DFS adoption, including usage of mobile banking, digital wallets, and other fintech services.
3. Financial well-being index adapted from the Consumer Financial Protection Bureau's (2015).
4. Demographic variables including age, education, income, and location.

Data Analysis

Data analysis employs segmentation analysis, structural equation modeling (SEM), and Tobit regression to examine the relationships between technology readiness, DFS adoption, and financial well-being, while controlling for demographic factors. SEM allows for the simultaneous estimation of multiple relationships and the incorporation of latent variables, making it particularly suitable for this study (Hair et al., 2017).

Key Findings & Discussion

Five technology adoption segments of customers are identified in this study, demonstrating significant variation within socio-economic groups and confirming that the digital finance market is heterogeneous. The distinct technology adoption beliefs held by respondents in each segment provide a basis for developing strategies to increase the penetration of digital financial services. For example, Pioneers are optimistic and innovative but also somewhat resistant to digital financial services; thus, providing them with reassurance about digital financial services and their practical benefits may encourage earlier adoption, as also observed by Rose and Fogarty (2010) and Wiese and Humbani (2020). Confirmatory factor analysis and structural equation modeling were used to analyze the impact of digital financial services adoption on the financial well-being of individuals. Technology readiness is a significant antecedent of perceived ease of use and perceived usefulness, which in turn influence attitudes and intentions toward digital financial services, ultimately leading to adoption. The behavioral process of digital financial services adoption follows the sequence: technology readiness influences perceived ease of use, which affects perceived usefulness, shaping attitude and intention, and finally resulting in adoption. This model, validated across overall, regional, and gender groups, shows that technology readiness has a behavioral impact on digital financial services adoption, and adoption positively affects financial well-being, though the strength of this effect varies by demographic segment. These findings contribute to a deeper understanding of consumer behavior in digital finance and support the development of targeted interventions to promote broader and more effective adoption of digital financial services (Rose & Fogarty, 2010; Wiese & Humbani, 2020).

Tobit regression analysis reveals that gender and family structure are significant predictors of financial well-being, with men and individuals from joint families reporting higher scores. Possession of a Permanent Account Number card is negatively associated, while having a passport is positively linked to financial well-being. Education, employment, and income show no significant effect. Financial behavior and technology readiness positively impact financial well-being, but digital financial services adoption and digital channel access do not exhibit a significant relationship. This suggests that behavioral and belief-based factors are more critical for financial well-being than the mere use or breadth of digital financial services channels.

Implications for Practice and Policy

Financial service providers should tailor digital financial products and user interfaces to different consumer segments based on their technology readiness levels. Policymakers should consider the varying impacts of DFS adoption on financial well-being across different consumer segments when formulating financial inclusion policies. Regulators should ensure that consumer protection measures are in place, especially for vulnerable groups at risk of digital financial exclusion or exploitation. Financial education programs should address specific barriers to DFS adoption among different socioeconomic groups, particularly focusing on older and rural populations with lower technology readiness.

Conclusion

This research advances understanding of the complex dynamics underpinning digital financial inclusion in emerging markets. By elucidating how technology readiness and demographic factors shape DFS adoption and financial well-being, the study offers actionable insights for building more inclusive, resilient, and effective digital financial ecosystems. These findings are particularly salient as India and other developing economies continue to pursue digital transformation and financial inclusion agendas.

Limitations and Future Research

The study's cross-sectional design limits causal inference, and its focus on Maharashtra may constrain generalizability. Future research should employ longitudinal methods and expand to other regions to validate and extend these findings. Incorporating institutional and environmental factors could provide a more holistic understanding of DFS adoption dynamics.

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