Determinants of Fintech Service Adoption in Public Sector Banks A Conceptual Model–Based Empirical Analysis

Dr.J.Prabhakaran[1], Prof. (Dr.) Ravinder Rena[2]

[1] PDF Scholar, Lincoln University College, Malaysia; [2] Professor of Economics, DUT Business School, Faculty of Management Sciences (FMS) Durban University of Technology

Email ID : pdf.prabhakaran@lincoln.edu.my ravinder.rena@gmail.com

Abstract

The emergence of financial technology (Fintech) has significantly transformed the banking industry by enhancing the efficiency, accessibility, and convenience of financial services. Public sector banks, which serve a large portion of the population in developing economies, are increasingly adopting Fintech solutions to remain competitive and promote financial inclusion. However, the adoption of Fintech services among customers of public sector banks remains uneven and influenced by multiple technological, behavioral, and psychological factors. This study aims to identify the key determinants influencing the adoption of Fintech services in public sector banks using a conceptual model derived from established technology adoption theories. The study examines the impact of perceived ease of use, perceived usefulness, performance expectancy, social influence, facilitating conditions, hedonic motivation, perceived risk, and perceived benefits on users' attitudes and adoption of Fintech services. The research addresses critical gaps related to public sector banking, psychological factors, government policy influence, and sustained usage of Fintech applications. The proposed conceptual model is empirically validated using data collected from customers of selected public sector banks. The findings are expected to provide insights for banking institutions, policymakers, and Fintech developers to design more inclusive, secure, and user-centric digital banking solutions.

Keywords

Fintech Adoption, Public Sector Banks, Behavioral Intention, Attitude, Technology Acceptance, Perceived Risk, Digital Banking

1. Introduction

Financial Technology (Fintech) represents the integration of advanced digital technologies into financial services to improve efficiency, accessibility, and customer experience. The rapid evolution of technologies such as artificial intelligence, blockchain, cloud computing, big data analytics, and mobile applications has reshaped the traditional banking environment. Fintech applications now support a wide range of services, including digital payments, online banking, peer-to-peer lending, robo-advisory services, and mobile wallets.

In India, the adoption of Fintech services accelerated significantly during and after the COVID-19 pandemic. Lockdowns and social distancing measures compelled customers to rely heavily on digital financial platforms for everyday transactions. Government initiatives such as Digital India, Unified

Payments Interface (UPI), and Aadhaar-based payment systems further accelerated the shift toward digital financial services.

Public sector banks play a crucial role in India's financial ecosystem by serving rural, semi-urban, and economically weaker sections of society. Despite their widespread presence and efforts to implement Fintech solutions, the adoption rate among customers varies significantly. Factors such as trust, perceived risk, usability, technological literacy, and social influence shape customers' adoption decisions. Therefore, understanding the determinants influencing Fintech adoption in public sector banks is essential for achieving digital financial inclusion and sustainable banking growth.

2. Research Gap

2.1 Limited Regional Focus

Most existing studies on Fintech adoption focus on urban areas or developed countries. There is limited research addressing the adoption behavior of customers in semi-urban and rural regions served by public sector banks.

2.2 Lack of Studies on Public Sector Banks

Research on Fintech adoption predominantly centers on private banks and independent Fintech firms. Public sector banks, which serve a diverse and large customer base, remain underexplored.

2.3 Neglect of Behavioral and Psychological Factors

Many studies emphasize technological and economic factors but overlook psychological aspects such as trust, perceived risk, and user attitude.

2.4 Limited Integration of Multiple Theories

Most studies rely on a single theoretical framework such as TAM or UTAUT. There is a need for an integrated model combining multiple determinants to better explain Fintech adoption.

2.5 Overlooked Impact of Government Policies

Although initiatives like Digital India significantly influence digital adoption, their specific impact on Fintech usage in public sector banks has not been thoroughly examined.

2.6 Lack of Focus on Long-Term Engagement

Existing research primarily examines initial adoption rather than sustained usage and long-term customer engagement.

2.7 Technological Integration Challenges

The integration of emerging technologies such as AI, blockchain, machine learning, and biometrics within public sector banks remains insufficiently explored.

3. Objectives of the Study

1. To categorize the demographic and behavioral profiles of Fintech app users.
2. To analyze usage trends among customers of public sector banks.
3. To examine factors influencing user attitudes toward Fintech applications.
4. To study the relationship between technological, social, and psychological factors and behavioral intention.
5. To measure the impact of perceived ease of use, perceived usefulness, and performance expectancy on user attitude.
6. To validate the proposed conceptual framework.
7. To analyze the relationship between attitude, behavioral intention, and actual adoption of Fintech services.

4. Research Hypotheses

Based on the review of literature, identified research gaps, and the conceptual framework derived from technology adoption theories such as TAM and UTAUT, the present study proposes a set of hypotheses to examine the determinants influencing the adoption of Fintech services in public sector banks. The hypotheses are structured to analyze the relationships among perceived factors, attitude, behavioral intention, and actual adoption of Fintech services.

4.1 Hypotheses Related to Attitude

H1: Perceived Ease of Use positively influences attitude toward Fintech applications.
H2: Perceived Usefulness positively influences attitude toward Fintech applications.
H3: Performance Expectancy positively influences attitude toward Fintech applications.
H4: Social Influence positively influences attitude toward Fintech applications.
H5: Facilitating Conditions positively influence attitude toward Fintech applications.
H6: Hedonic Motivation positively influences attitude toward Fintech applications.
H7: Perceived Risk negatively influences attitude toward Fintech applications.
H8: Perceived Benefits positively influence attitude toward Fintech applications.

5. Conceptual Framework

The conceptual framework integrates constructs from major technology adoption theories such as TAM and UTAUT. The model proposes that technological, social, and psychological factors influence user attitude, which in turn affects behavioral intention and actual adoption of Fintech services.

Structure of the Conceptual Model

Independent Variables

- Perceived Ease of Use

- Perceived Usefulness
- Performance Expectancy
- Social Influence
- Facilitating Conditions
- Hedonic Motivation
- Perceived Risk
- Perceived Benefits

Mediating Variable

- Attitude toward Fintech Applications

Dependent Variable

- Adoption of Fintech Services

The model assumes that:

- Independent variables influence attitude.
- Attitude influences behavioral intention.
- Behavioral intention leads to actual adoption.

6. Research Methodology

6.1 Research Design

The study adopts a **descriptive and analytical research design** using a quantitative approach. The aim is to examine the relationships between multiple determinants and Fintech adoption in public sector banks.

6.2 Population and Sampling

The target population consists of customers of major public sector banks in India. The study focuses on the **top five public sector banks based on market capitalization**.

A structured questionnaire is used to collect primary data from bank customers who use or have access to Fintech services.

6.3 Sampling Technique

A **convenience and purposive sampling technique** is adopted to select respondents who actively use Fintech applications.

6.4 Data Collection Method

- Primary data: Structured questionnaire
- Secondary data: Journals, reports, RBI publications, and Fintech studies

6.5 Measurement Scale

A **5-point Likert scale** is used to measure respondents' perceptions, ranging from:
1 – Strongly Disagree
2 – Disagree
3 – Neutral
4 – Agree
5 – Strongly Agree

6.6 Data Analysis Techniques

- Descriptive statistics
- Reliability analysis (Cronbach's alpha)
- Correlation analysis
- Regression or Structural Equation Modeling (SEM)
- Model fit analysis

7. Research-Related Variables

7.1 Demographic Variables

- Gender
- Age
- Educational Qualification
- Occupation
- Annual Income

7.2 Independent Variables

- Perceived Ease of Use
- Perceived Usefulness
- Performance Expectancy
- Social Influence
- Facilitating Conditions
- Hedonic Motivation
- Perceived Risk
- Perceived Benefits

7.3 Mediating Variable

- Attitude toward Fintech applications

7.4 Dependent Variable

- Adoption of Fintech services

8. Model Fit Summary

To validate the conceptual model, Structural Equation Modeling (SEM) is employed. Model fit indices are used to evaluate how well the proposed model fits the observed data.

Common Model Fit Indices

Fit Index	Recommended Value	Interpretation
Chi-Square/df	< 3	Acceptable fit
GFI (Goodness of Fit Index)	≥ 0.90	Good model fit
AGFI	≥ 0.80	Acceptable fit
CFI (Comparative Fit Index)	≥ 0.90	Good fit
TLI	≥ 0.90	Good fit
RMSEA	≤ 0.08	Acceptable fit
SRMR	≤ 0.08	Good fit

A model is considered acceptable when most indices meet the recommended thresholds.

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