

An Empirical Study on the Effectiveness of FinTech Innovations in Financial Inclusion with Special Reference to Banking Sector in Uttar Pradesh

**Abstract of
Thesis**

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Introduction

FinTech

FinTech is currently regarded as one of the popular areas in finance. FinTech has not occurred recently - the institutions offering banking and financial services are been the early adopters of innovative technologies from a long time ago. FinTech innovations were sparked by the global financial crisis. The COVID-19 pandemic is the driving force behind the increased adoption of the most promising financial innovations, while leaving behind those who do not offer consumers and businesses with solutions. “Fintech” is a buzzword that is derived from fusion of the terms ‘financial’ and ‘technology’. Fintech encompasses several elements related to banking and innovative business models. It covers the entire spectrum of advancements in financial services, where technology has been the primary facilitator. FinTech lack a generally acknowledged categorization. There is no widely agreed classification system for fintech innovations. Today, fintech firms offer a wide-ranging financial services, starting with the products that compete with core banking operations to advanced lending services, simple payment methods, and products that target banking third-party revenue streams including wealth advisory facilities supported by analytics.

In India, simple mobile applications are accessible that can turn anybody into an ATM. Those people who have registered there bank account with the app can easily find out the nearby cash points and also receive money or apply for small amount of loan with their secure ID. This demands for a quick action, thus banks are reacting to this disruption by concentrating on the digital experiences of the customer and implementing innovative

solutions to enhance and streamline operations by focusing on digital services rather than on physical channels. Although recent innovations, like the Unified Payment Interface (UPI) gave banks the chance and supporting infrastructure to create their own reactions to specific innovations but there is also a need for latest fintech firms to carefully consider how they can adapt in this shifting environment.

Financial Inclusion

Financial inclusion refers to providing financial services at a reasonable price to all segments of the society (AFI, 2018). It is means, not an end in itself. Although having an account is the first step towards financial inclusion, it doesn't end there. Consumer's consistent use of these accounts promote expansion of the economy. According to research, financial inclusion facilitates people to establish and grow businesses, spend in education, enhance risk management, and bear up financial shocks. In recent times, innovative mobile payment technologies and increased bank account access has resulted to significant progress in supporting financial inclusion of unbanked people. Technology has been identified as a crucial component of financial inclusion by AFI and the GPFI. AFI established the Digital Financial Services Working Group in 2010, and other working groups of AFI also considered technology as an important factor. Three dimensions that are taken into account for measuring financial inclusion are: access, usage and quality. The indicator "access" represent the breadth of financial services reach whereas "usage" indicator track the frequency and duration of a customer's use of a financial product or service over time. "Quality" indicator reflects the customers awareness and knowledge of

financial products and how well these products and services fulfil their demands (World Bank, 2015).

In India, the three primary accelerators of financial inclusion are known as the JAM trinity, which stands for Jan Dhana Yojana, Aadhar, and Mobile phones. Most Indian residents have opened bank accounts as part of the PMJDY programme of the Indian government, and these accounts are now the standard method for receiving government payments, such as those sent via the system of Direct Benefit Transfer (DBT). The future of banking is anticipated to be digital due to increasing smartphone and internet usage. The idea is to advance more established models of financial access by connecting bank accounts to mobile numbers and biometric identification (via the Aadhaar scheme).

Rationale of the Study

From 2010 to 2017, much of the growth was linked to the effect of financial technology (FinTech) in a number of countries. Three examples are: the rise of mobile money, particularly in Kenya and East Africa, where this type of FinTech has done the most to advance financial inclusion; China, where a traditional financial system became one of the most digitized in the world, accompanied by the single largest reduction in poverty in world history; and India, where financial access increased dramatically in a very short period of time. In 2017, 80% of adults in India had an account. This was the result of an extensive effort to create an environment for a new financial system and digital economy (i.e. India Stack). As a result, over 350 millions of people now have account access for the first time. These examples show the effect of fintech innovations on financial inclusion in developing countries. So, there is a need to do a specific study on the effectiveness of fintech

innovations in financial inclusion focusing on banking sector. The results of this study will be beneficial for banking sectors as it will reveal the factors which have greater impact on the use of fintech innovations by their customers.

Research Gap

There are studies which focused on the factor that motivate a bank customer to use fintech innovations but there are very few studies that have addressed the barriers resisting to use these innovations. Thus, this study makes an attempt to increase the importance of TAM as a model by aggregating the constructs of innovation resistance theory so that problems in using fintech innovations can be identified and accordingly solutions to resolve them can be found. Another gap that was found while reviewing the literature was that only one dimension i.e. ‘access’ to financial driven services has been widely considered in overwhelming studies. But, there are also two other dimensions ‘usage’ and ‘quality’ of financial services that has not been much focused by the researchers. So, in this research two dimensions usage and quality has been used to measure the financial inclusion.

Objectives of the Study

1. To study the evolution of fintech innovations in banking sector.
2. To analyze the awareness level of fintech innovations among the customers of banking sector in Uttar Pradesh.
3. To assess the impact of fintech innovations on financial inclusion in Uttar Pradesh.
4. To identify various problems and challenges faced by customers of banking sector in adoption of fintech innovations.

Hypotheses Development

Based on objectives, following hypotheses has been formulated:

H1: Customers of banking sector are aware of fintech innovations.

H2a: Perceived usefulness has a positive and significant impact on the behavioral intention to use fintech innovations.

H2b: Perceived ease of use has a positive and significant impact on the behavioral intention to use fintech innovations.

H2c: Usage problems are negatively associated with behavioral intention to use fintech innovations.

H2d: Risk problems are negatively associated with behavioral intention to use fintech innovations.

H2e: Tradition problems are negatively associated with behavioral intention to use fintech innovations.

H2f: Behavioral intention to use fintech innovations has positive and significant impact on financial inclusion.

H3: Trust act as a mediating factor between behavioral intention to use fintech innovations and financial inclusion.

H4a: There is a significant difference in the perception and behavioral intentions of bank customers to use fintech innovations among different age group.

H4b: Perception and behavioral intentions of bank customers to use fintech innovations is influenced by gender.

H4c: Perception and behavioral intentions of bank customers to use fintech innovations is influenced by area of living.

Proposed Conceptual & Theoretical Framework

The proposed conceptual framework is based on Technology Acceptance Model (TAM) and Innovation Resistance Theory (IRT). Based on the discussed hypotheses, a conceptual framework has been proposed.

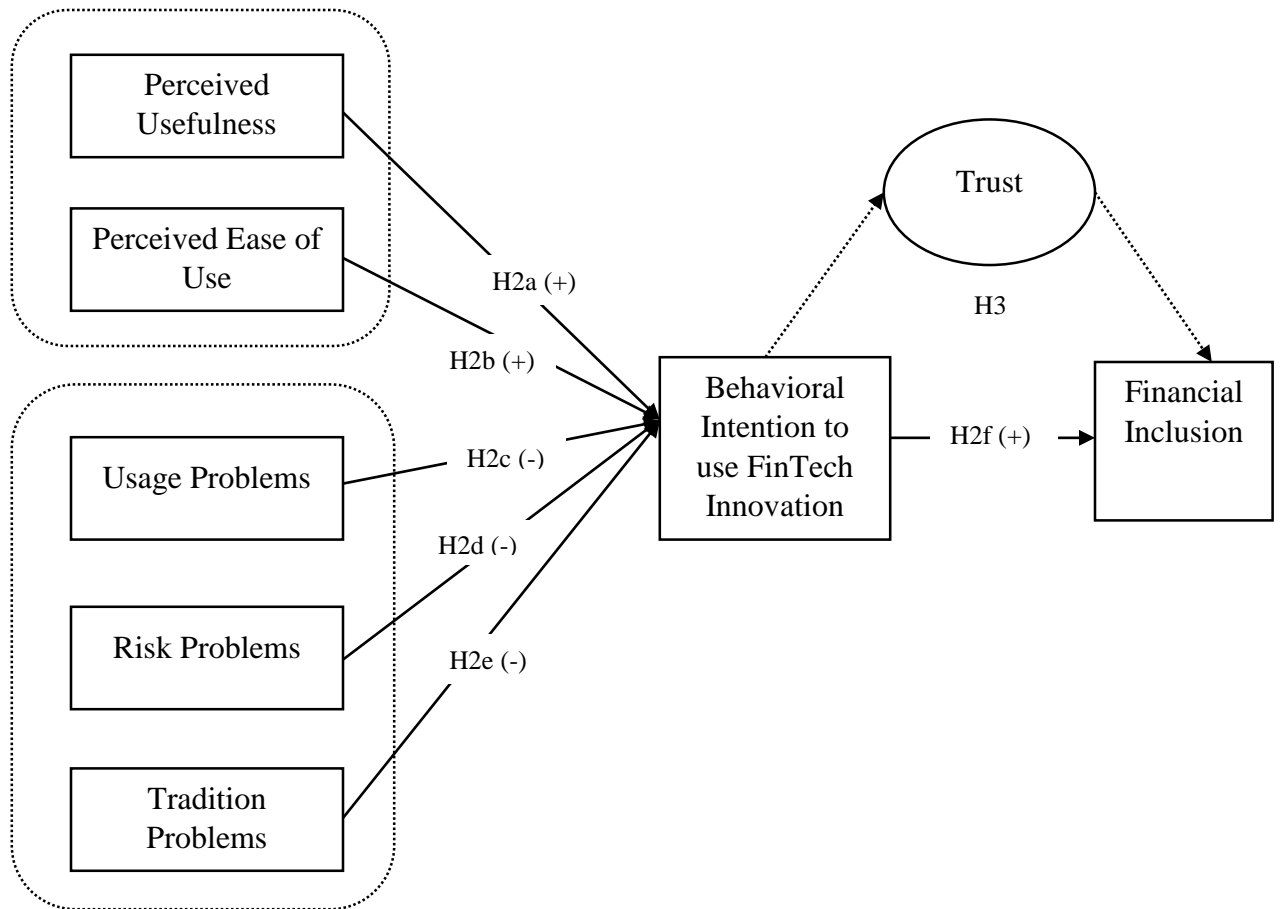


Figure: Proposed Conceptual Framework

Research Methodology

The table given below briefly presents the methodology adopted in this research.

Table: Brief Presentation of Research Methodology

Particulars		Research Method
Research Design		Descriptive-cum-Causal Study
Research Approach		Quantitative Approach
Research Tool for Data Collection		Secondary Data and Primary Data
Primary Data Tool		Survey through Questionnaires
Sampling Design	Target Population	Customers of Public and Private Sector Banks in Uttar Pradesh
	Sampling Frame	List of Selected Public and Private Sector Banks in Uttar Pradesh
	Sampling Technique	Multi Stage Sampling Technique (Probability Method)
	Sample Size	503 (Cochran Formula)
	Execution Process	Collection of Responses through Google Forms

Data Analysis and Interpretation

The table below presents the overview of data analysis that has been done to attain each objective of the research.

Table: Overview of Data Analysis

Objective No.	Objective	Required Analysis	Statistical Technique Applied	Software used for Analysis
2	To analyze the awareness level of fintech innovations among the customers of banking sector in Uttar Pradesh	Descriptive analysis	Charts and graphs	SPSS
3	To assess the impact of fintech innovations on financial inclusion in Uttar Pradesh	<ul style="list-style-type: none"> • Measurement model assessment • Structural model assessment 	Structure Equation Modeling	SPSS and AMOS
4	To identify various problems and challenges faced by customers of banking sector in adoption of fintech innovations	<ul style="list-style-type: none"> • Measurement model assessment • Structural model assessment • Mediation analysis 	Structure Equation Modeling	SPSS and AMOS
	To examine role of demographic variables (age group, gender, area of living) on behavioral intentions to use fintech innovations	Compare the means	ANOVA and Independent sample t-test	SPSS

Based on the analysis, the table below presents the result of the hypothesis that has been either supported or not supported.

Table: Summary of Results of Hypothesis

Hypotheses	Result
H1: Customers of banking sector are aware of fintech innovations.	Supported
H2a: Perceived usefulness has a positive and significant impact on the behavioral intention to use fintech innovations.	Supported
H2b: Perceived ease of use has a positive and significant impact on the behavioral intention to use fintech innovations.	Not Supported
H2c: Usage problems are negatively associated with behavioral intention to use fintech innovations.	Supported
H2d: Risk problems are negatively associated with behavioral intention to use fintech innovations.	Supported
H2e: Tradition problems are negatively associated with behavioral intention to use fintech innovations.	Not Supported
H2f: Behavioral intention to use fintech innovations has impact on financial inclusion.	Supported
H3: Trust act as a mediating factor between behavioral intention to use fintech innovations and financial inclusion.	Supported
H4a: There is a significant difference in the perception and behavioral intentions of bank customers to use fintech innovations among different age group.	Supported
H4b: Perception and behavioral intentions of bank customers to use fintech innovations is influenced by gender.	Not Supported
H4c: Perception and behavioral intentions of bank customers to use fintech innovations is influenced by area of living.	Not Supported

Research Findings

Objective 1: To study the evolution of fintech innovations in banking sector

Fintech is not a new term or phenomenon. From a long time innovative technologies have been applied in the banking sector to provide financial services smoothly to their customers. This journey started with the establishment of ATM and had now come far way, to the launch of innovative financial products like UPI. The global financial crisis, demonetization and COVID-19 are the events that have pushed people towards the use of digital means for doing transactions.

Objective 2: To analyze the awareness level of fintech innovations among the customers of banking sector in Uttar Pradesh

Based on the results, it can be said that majority of the respondents were aware of the term ‘fintech innovations’ and social media, friends or relatives are the important source of spreading the awareness. Only 33.4% of the respondents were found to be aware of all the fintech innovations selected for the study. Furthermore, 31.21% of the respondents have incorporated the use of fintech innovations in their daily routine.

Objective 3: To assess the impact of fintech innovations on financial inclusion in Uttar Pradesh

Research found that perceived usefulness positively influences the customer intentions to use fintech innovations. This validation proves that features of fintech innovations like enabling quick transaction which is easy to process and time saving increases the effectiveness of fintech innovations in meeting the service needs of the customers. But, it was found that perceived ease of use has no impact on behavioral intention to use fintech

innovation. This may be due to increase in willingness of people to use even those innovations which are little complex to use but is useful for them. Sudden emergence of demonetization and COVID-19 has increased importance of these innovations in their daily lives.

Furthermore coming to the barriers, it was found that usage problem is negatively associated with the behavioral intention of bank customers with reference to use of fintech innovations. Reason behind this may be that it is not easy for the customers to incorporate changes in their current routine. Using these innovations means replacing the cash transactions which is the part and parcel of their daily routine. Customers may feel that using fintech innovation for daily transactions is very complicated and it would also be a time taking process. Thus, they would not be willing to adopt and use these innovations. Along the same line, results present a negative association of risk problem with behavioral intention to use fintech innovations. This negative relationship may be the result of several fear that arises among customers on account of using fintech innovations. Like, fear of entering wrong information and fear that someone may hack their account while using these innovations which may led to loosing of money or paying money to wrong person. It is surprising to note that results does not show a significant relationship between tradition problem and behavioral intention of bank customers. The results of present study indicates that in the current scenario tradition problem is not acting as a barrier in acceptance of fintech innovations. This may be because COVID-19 has changed the psychology of customers who were previously getting a better feeling by using cash as their financial means but now are afraid of using cash as this may spread the disease.

As having an intention to use an innovative product differs from actually using it so this study helped to know whether intentions of the bank customers converts into actual use of fintech innovations. Current study covers the usage and quality dimensions of financial inclusion. Overall it aimed to find out whether an increase in the intentions of bank customers to use fintech innovations will enhance the financial inclusion or not. Results drawn from this study corroborate the hypothesis (H2f) stating a positive relation between them.

Objective 4: To identify various problems and challenges faced by customers of banking sector in adoption of fintech innovations

As per the discussion, research focused on three problems i.e. usage problem, risk problem and tradition problem. Among these problems based on the result it was found that usage problem and risk problem has a significant and negative impact on behavioral intention to use fintech innovations whereas tradition problem influences negatively on customers intention but is not found significant. Further, trust has been considered as a challenge faced by customers in adoption of fintech innovations. Results drawn from this study shows that trust plays a partial mediating role in the relationship of behavioral intention to use fintech innovations and financial inclusion.

Additional Findings

Apart from achieving the objectives, this research also made an attempt to examine role of demographic variables on perception and behavioral intentions to use fintech innovations. Results reveal that perception and intentions of an individual to use fintech innovation is only influenced by the category of age group to which he or she belongs to but not by the area in which they live or their gender.

Conclusion and Suggestions

This research aimed at examining the effectiveness of fintech innovations in financial inclusion. For this, impact of fintech innovations on financial inclusion has been assessed, and problems along with challenges in using fintech innovations has been identified. From the results, it has been concluded that perceived usefulness, risk problem and usage problem are the factors that influence the intentions of bank customers to use fintech innovations but perceived ease of use and tradition problems has no significant role. Overall, it can be said that perception of bank customers in Uttar Pradesh influences their intentions to use fintech innovations which further impacts on financial inclusion. Due to trust issues despite of having intentions still customers are not actually using the fintech innovations and usage dimension indicates financial inclusion. Therefore, it can be said that trust acts as a challenge between behavioral intention to use fintech innovation and financial inclusion. Further results also show that age factor makes difference in forming customer intentions but gender and area i.e. urban or rural does not influences the intentions.

Thus, it can be concluded that fintech is effective in enhancing financial inclusion. And, its effectiveness can be improved by increasing usefulness of fintech products, eliminating security and privacy risks and building trust among the customers.

Based on the research findings, below mentioned are the suggestions to banks, government and fintech companies that may be incorporated for achieving the goal of financial inclusion through fintech innovations.

- Only 33.40% of the respondents are aware of different fintech innovations, this shows the lack of awareness among people, government must spread the awareness of different fintech innovations through advertisement and campaigns.
- Usefulness of the fintech products should be increased, by adding innovative features to it. Because, it can be interpreted from the results that ease of use does not matters. If the customers believes the innovation to be useful he or she will have intention to use the product.
- It is important to focus more on usage and risk problems like reducing complexities in using fintech innovations and eliminating the risk of either trapping in fraud or fear of paying wrong amount of money to the wrong person.
- There is a strong correlation between behavior intention to use fintech innovations and financial inclusion, but trust act as a challenge in converting customer intentions into the actual usage. So, strict rules and regulations should be made regarding this to ensure safety and security of personal and financial information of customers. This will build trust among the customers for fintech innovations and will motivate them for using these products.
- Along with the use of fintech innovations, focus should be also on the satisfaction derived by the customers after using these products.
- Building regulatory and policy framework to protect the customers from the unwanted risk that come along with the benefits of using the fintech innovations.

- It must be ensured that there is quick and effective system redressing grievances of the customers regarding data protection and frauds.

- As banks and fintech companies both are aiming to achieve the goal of financial inclusion so they must collaborate with each other and move together in the journey of digital revolution. They can analyze their core strengths and weaknesses to fill the gap thus making a win – win situation for both.