

Fintech's and digital financial services' impact on financial inclusion in india

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Abstract

India's financial inclusion has significantly improved during the last several years. In recent years, there has been a rise in the number of Indians who have bank accounts; at the moment, it is believed that this figure is close to 80%. FinTech businesses in India are progressively becoming more noticeable as the Government of India (GoI) continues to strive on expanding financial services to the underbanked sector of the population. To reach the underbanked portions of the population and provide a stable operating environment for FinTech businesses, India must seek to increase financial inclusion. Regression and correlation were employed, together with secondary data gathered from source of the RBI, to analyses this influence. As a result, the study's goal is to determine the impact of fintech and digital financial services on financial inclusion in India. According to research results, fintech businesses have significantly aided financial inclusion in this nation, especially for the middle class. These findings will be useful for policymakers who are working hard to bring every person of this country into an organized financial system.

Keywords

Fintech, Financial Services, Financial Inclusion, Behavior Intention, Service Trust, Usability, Social Influence

1 INTRODUCTION

India is fastest growing nations and also one of the most populous countries. Nevertheless, a significant portion of rural and tribal land is cut off from official banking services, contributing to sluggish economic development and widespread poverty in the region [1]. Those who are underprivileged have a more difficult time managing their money than anybody else since their income is often unpredictable and unpredictable [3]. They need simple access to savings [8], microcredits [10], insurance [9], and payment and transfer services [13] in order to satisfy a wide variety of financial needs. These requirements include the need for a extensive diversity of economic and acceptable financial services. However, since they have restricted access to official financial services, they make use of informal networks, which are characterised by lower levels of reliability and security and higher costs than standard services [14, 15].

Financial technology businesses, often known as FinTech's, came into existence during the financial crisis that occurred between 2007 and 2008 and have since then revolutionized the financial sector by introducing new technologies to the marketplace [16, 17]. Technology-based banking has served as the two pillars around which the growth of modern banking has been built [18]. In India, over the course of the last decade, the fast development of mobile networks into previously unserved areas and communities has also served as a major engine for the cause [19, 20]. Payments banks have emerged as an additional alternative to online and mobile banking, contributing to an increase in operational efficacy and a reduction in the expenses associated with providing services to customers located in rural and semi-urban areas [11, 21].

The establishment of an inclusive financial sector provides two contributions that complement one another [17, 25]. First, those who are excluded from the market may be connected to economic development via financial inclusion, and second, new people are drawn into the economy and financial system as a result of economic growth [11, 26]. Inclusive financial advances can alleviate poverty by funding growth elements such increasing people's access to possibilities for savings mobilization and

entrepreneurship, lowering people's susceptibility to risk, and enhancing their standard of living [27, 28, 29]. The mission of expanding access to financial services has led to the development of new kinds of banks, such as small banks, mobile money services, and payment banks catering to individuals who do not have bank accounts. Financial inclusion has also advanced to include new non-bank Fintech businesses that are vying for a more major portion of the Banking value chain [30, 31]. This is a measure of how far the industry has come. This study investigates the impact of behavioural Intention, fintech Service Trust, fintech services Usability, and Social Influence of people on the usage of fintech services for financial inclusion.

2 REVIEWS OF LITERATURE

The promotion of much-needed financial sector growth was the fundamental reason for the introduction of the concept of microfinance in countries that were still in the process of developing [32, 33, 34, 35]. financial inclusion and economic expansion and development are strongly associated with each other [36].

Jack and Suri mentions that [37], innovations in financial technology may provide solutions that are both more cost-effective and more efficient by lowering the expenses associated with transactions. This also helps micro and small enterprises increase their sales by minimizing the costs that are connected with alternative payment solutions [38].

Aron [41] does an empirical analysis of mobile money and finds evidence for the role of mobile money to enhance risk-sharing. Other noteworthy research, such as that conducted by weil and Mbiti [42] and Wieser and others [43], demonstrates that increased usage of FinTech leads to a reduction in the use of informal methods of savings and an intensification in the number of remittance transactions. These findings support the findings of Jack and Suri [37]. Other studies in this field have investigated the effects of the digitalization of social support programmes for the less fortunate [44, 45].

Determine whatever possible possibilities and difficulties there are

for each of the different stakeholders [27]. The majority of Indian financial institutions having eye on the industry and are attempting to gain knowledge from the experiences of others [46]. Indian MFIs are about to launch again, embracing fast change and mobile money, while new players investigate potential alternatives and partnerships. Several institutional shortcomings and other issues contribute to the significant lack of access to financial services in India's impoverished areas. As a consequence, the economy can't grow to its full potential since people aren't taking use of their own economic opportunities [47]. As a direct consequence of this, microfinance programmes have been launched in industrialised nations such as India in order to provide assistance to those living in impoverished areas such as inner-city neighborhoods [48]. Since that time, the majority of the needs of the poor regarding financial services have not been met [48], which has resulted in a boom in the process of financial inclusion in the under-developed region of India [48]. The table that follows provides an overview of the main constructs, elements, and variables that were employed in the research on important drivers of financial inclusion.

Table-1 Variables

Construct	Code	Variables
Behavioural Intention (BI)	BI1	I intend to contribute to the expansion of access to financial services through the application of FinTech.
	BI2	I will always give first priority to using mobile services based on financial technology whenever possible.
	BI3	I intend to keep implementing FinTech for Financial Inclusion.
	BI4	It is my Intention to contribute to Financial Inclusion through the application of FinTech.
Social Influence (S.I.)	SI1	Financial technology and services for the financially excluded were something I was supposed to use.
	SI2	Peers who have an impact on my decisions recommended that I try out financial inclusion offerings powered by fintech.
	SI3	It is more likely that I use financial inclusion services based on FinTech, as judged by people whose opinions I value.
Service Trust (S.T.)	ST1	Services for the financially excluded that are based on FinTech have been proven reliable.
	ST2	Financial technology (FinTech) based services for the underserved must be handled with care.
	ST3	Due to my prior positive experience with such services, I have faith in those that are based on financial technology.
Usability (U.B.)	UB1	When it comes to financial inclusion, I am likely to use services powered by financial technology.
	UB2	Regularly, I make use of services that promote financial inclusion that are enabled by advances in financial technology.
	UB3	Several of the services that are based on FinTech are quite important to me.
Fintech Use for Financial Inclusion	FTFI1	It is possible to employ fintech to expand access to banking services in India's rural areas.
	FTFI2	Financial inclusion in India's rural areas can be achieved through the usage of fintech by increasing household income.
	FTFI3	Financial inclusion in rural India can be achieved through the usage of fintech by increasing savings rates.

3 RESEARCH GAP & OBJECTIVES

The inability to participate in the formal economic system is increasingly being recognised as a barrier to the eradication of poverty in the future. The stakeholders in the FinTech ecosystem are hampered by a variety of cultural and procedural restrictions. There is also a lack of consensus among researchers about whether or not mobile money systems are able to live up to their full growth potential in rural areas [1, 9]. Research on financial inclusion for the Bottom of the Pyramid (B.O.P.) in Indian society also needs a change and attention to be placed on the creation of technological solutions for the population that has not been reached [8, 11]. Therefore, it is currently a critical concern to create innovative means of providing financial services to those who are economically disadvantaged.

The social, cultural and contexts in which these technologies are deployed have only garnered a very insignificant amount of attention from researchers so far. In addition, there is a lack of empirical research in the context of India that identifies the most important factor for the success of using technology in the expansion of financial services [12, 13]. This study intends, in part, to bring to light the lack of research devoted to the inclusion and empowerment of economically disadvantaged people, and the necessity for such studies. This research will also analyse the impact of digital technology in creating jobs and alleviating poverty via an empirical examination of entrepreneurial endeavors from economically

disadvantaged neighborhoods [22, 24].

There has been few empirical research connected to developing economies that aim to determine the crucial success element for financial inclusion via the use of mobile technology [23, 25, 26, 27]. The suggested research seems to have a more contextual approach to the alleviation of poverty in less developed places. It also gives developing good practices for policy-makers in this complex and constantly evolving market [11, 31]. The purpose of the proposed article is to address a gap in the existing body of research on financial inclusion and the role of financial technology in the delivery of financial services. The current study takes an empirical approach to measuring the influence that technology has on the promotion of entrepreneurship in underdeveloped regions. It also highlights the essential success elements for the future adoption of financial technology in rural areas [17,18]. Both qualitative and quantitative methods are used in the study that we do. The qualitative technique is utilized to get an understanding of the many different adoption theories and psychological aspects that are associated with the adoption of technology [20, 59]. Testing hypotheses using the quantitative technique often involves the use of inferential statistics. C.F.A is being used for the purpose of factor identification, and SEMis being utilized in order to quantify the effect that FinTech has had on the expansion of financial inclusion in Rural India, hence following model has been proposed by the researcher.

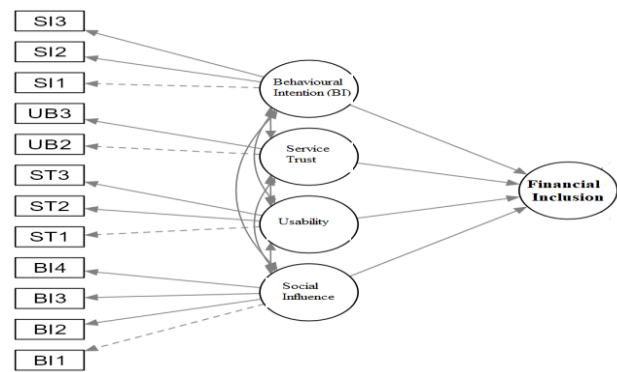


Figure-1 Conceptual Framework

4 RESEARCH OBJECTIVES

- There is an impact of behavioural Intention of people on the usage of fintech services.
- There is an impact of fintech Service Trust on the usage of fintech services for financial inclusion.
- There is an impact of fintech services Usability on the usage of fintech services for financial inclusion.
- There is an impact of Social Influence on the usage of fintech services for financial inclusion.

5 RESEARCH METHODOLOGY

Testing hypotheses is done using inferential statistics in the quantitative method. It is important to quantify the role that FinTech plays in promoting financial inclusion in rural India, thus researchers there are using confirmatory Factor Analysis to identify the most important contributing factors and SEM to analyses the data. According to the findings, behavioural Intention to utilize manager technology in India's rural sector is favorably impacted by elements creating social influence. End-users who are used to using monetary tech services and systems are more likely to follow through on their stated goals.

For this reason, a CFA was a crucial part of the study's early phases in order to find variables of adoption of financial innovations. At this step of the study process, statistical tests are used to determine whether or not the association exists and, if so, how strong it is. SEM is the key statistical method used to test the hypotheses and analyses the effect of FinTech on financial inclusion via mobile money services.

6 SAMPLE DESIGN

Users of financial technology and rural business owners that make use of mobile money and other services provided by financial technology make up both the Universe of the research as well as the demographic that

is the focus of the survey. Due to the fact that there are 130 billion people on the planet, it is impossible to get the opinions of the whole population; as a result, the sampling approach has been institutionalized. Using a method known as stratified judgmental sampling, the sample frame consists of respondents who have been selected at random based on their demographic profile. The total number of respondents that participated in the survey was 400.

7 DATA COLLECTION METHOD

Mainly Primary information is used in the process of data collecting, including the use of surveys for the gathering of primary information. The primary data came from the more rural parts of India's main regions, and it was acquired using stratified sampling methods. Using responses from a pilot study of people who use mobile money and other financial technology, a structured questionnaire was put through its paces. A Likert-Rating scale, as well as nominal and rank-order scales, were used in the preparation of the questionnaire in order to facilitate data scaling.

8 RESULTS

Table-2 Models Info

Number of observations	400
Free parameters Model	85
	behaviours Intention =~BI1+BI2+BI3+BI4
	Service Trust=~ST1+ST2+ST3
	Usability=~UB2+UB3
	Social Influence=~SI1+SI2+SI3
	Fintech for Financial Inclusion=~FTFI1+FTFI2+FTFI3
	Fintech for Financial Inclusion~ behaviours Intention +Service Trust+ Usability+ Social Influence
Note: Variable (BI1, BI2, BI3, BI4, ST1, ST2, ST3, UB2, UB3, SI1, SI2, SI3, FTFI1, FTFI2, FTFI3) has been coerced to ordered type.	

Table-3 User model versus baseline model

	Model
Comparative Fit Index (CFI)	0.997
Tucker-Lewis Index (TLI)	0.996

Both CFI and TLI need to be at least 0.90 for your model to be considered valid, and both the condition have been met here in the above model as the value of CFI) & TLI found 0.997 and 0.996 respectively.

8.1 Estimates

Table-4 Parameters estimates

Dep	Pred	95% Confidence Intervals						
		Estimate	SE	Lower	Upper	β	z	p
Fintech for Financial Inclusion	behaviours Intention	0.222	0.08	0.053	0.39	0.09	2.02	0.058
	Service Trust	0.382	0.15	0.076	0.68	0.39	2.68	0.008
	Usability	0.083	0.02	0.035	0.13	0.07	3.21	<.001
	Social Influence	0.230	0.17	-	0.58	0.17	1.94	0.059

Table 4 is of parameters estimations, where there are four predictors, behaviours intention, service trust, Usability, and social influence and their impact has been measured over the financial inclusion because of the fintech companies' disruption over the last 10 years particularly. and this has been estimated and observed in the parameters estimate, that service trust (0.3823) has been the most prominent factor, which have significant impact on the financial inclusion, means people do believe that the fintech services are trustworthy and they can use them for their financial transactions, while Social Influence (0.2304) was the second most significant indicator of the financial inclusion, although the value was not found significant. while behavior intention of using fintech products, is the third prominent reason, which promoting the financial inclusion in the rural areas and the value was also found significant, while Usability (0.0839) was also found most significant and having impact on the financial inclusion. Except social influence, threshold value of all the construct was found significant.

Table-3 Measurement model

Latent	Observed	Estimate	SE	95% Confidence Intervals		β	z	p
				Lower	Upper			
behaviours Intention	BI1	1	0	1	1	0.187		
	BI2	0.814	0.126	0.56	1.06	0.152	6.43	<.001
	BI3	2.988	0.352	2.29	3.67	0.557	8.48	<.001
	BI4	3.03	0.356	2.33	3.72	0.565	8.51	<.001
Service Trust	ST1	1	0	1	1	0.477		
	ST2	1.183	0.239	0.71	1.65	0.536	4.94	<.001
	ST3	0.915	0.167	0.58	1.24	0.437	5.47	<.001
Usability	UB1	1	0	1	1	0.395		
	UB2	0.983	0.005	0.97	0.99	0.389	195.42	<.001
Social Influence	SI1	1	0	1	1	0.358		
	SI2	1.307	0.377	0.56	2.04	0.468	3.46	<.001
	SI3	1.313	0.379	0.57	2.05	0.467	3.46	<.001
Fintech for Financial Inclusion	FTFI1	1	0	1	1	0.46		
	FTFI2	1.148	0.247	0.66	1.63	0.528	4.63	<.001
	FTFI3	0.592	0.166	0.26	0.91	0.272	3.55	<.001

There are two models that make up a structural equation model, and they are the measurement models and the structural model. The connections between the observable data and the latent variables are modelled by the measuring instruments. How the latent variables are connected is shown in the structural model. here we are estimating the measurement model, where basically association of latent and observed variable has been measured, as far as behaviours Intention in concerned, this can be seen that BI4 (3.030) has strongly associated with the latent observed variable, i.e., behaviours intention, while BI2 (.814) was found least associated with the same.

In case of social trust, ST2 (1.183) found most significant, while ST3 (0.915) was found less association with the same, in case of Usability, there were only two variables and both found associated, UB1 had stronger association in comparison to UB2. Social Influence was the third latent variable and found SI1 (1.313) associated with its construct, while SI3 was found most correlated with the same. Last latent variable is fintech for financial inclusion where FTFI2 was found strongly associated while FTFI1 was less associated.

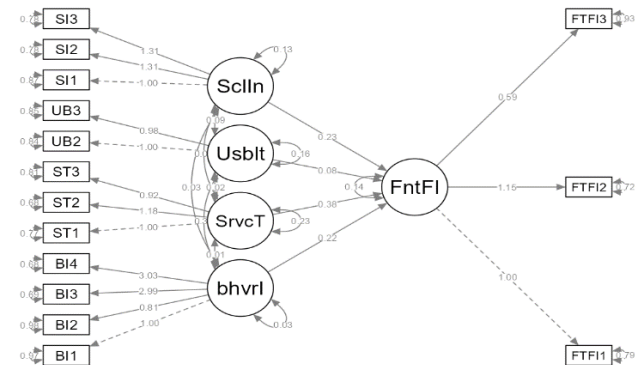


Figure-2 Estimated Framework

The causal assumptions are shown in the SEM graphic. One parameter per arrow in the diagram estimated with the use of a covariance or correlation matrix, provided the parameters of the model are known.

Here in the path diagram, there are 4 latent variable, behaviours Intention, Service Trust, Usability and Social Influence, and are represented by circles and 12 manifest variables by rectangles. All the latent variable are not associated strongly with each other, social influence and Usability of fintech products (0.09) having low degree of Association,

still most strongest among all the latent variable relationship, while the usability and service trust (0.02) also associated, but then Association is not as strong as the association of social influence and usability variables, the relation between service trust and behavioral Intention (0.01) was found minimum among all the latent variable relations, and it was found less than the association between social influence & Usability and Usability & service trust, the association between social influence and behavioral Intention was not so significant although it was more stronger than the association between the service trust and the Usability as well as the service trust and behavioral Intention.

9 CONCLUSIONS

It is generally agreed upon that financial inclusion is necessary for the alleviation of poverty, the promotion of balanced economic growth, and the maintenance of economic stability. In underdeveloped nations, a significant portion of the population does not have access to even the most fundamental banking services. The vast majority of them come from Asian and Middle Eastern countries. The provision of fundamental monetary services, like as banking, is still largely out of reach for millions of individuals, particularly those living in India's most rural and isolated areas. It is necessary to make use of financial technology and services related to mobile money in order to complete financial transactions and to improve one's standard of living by investing in the creation of new enterprises or initiatives related to self-employment. The sharing economy, legislation, and information technology are all contributing to the rapid progress that is being made owing to these initiatives. Despite this, the research that is being done in the field of FinTech is still in its infant phases. In most nations that are still developing, policymakers see financial inclusion as a top objective for development.

This work is a contribution to the body of research that deals with the factors of Fintech with financial inclusion, particularly for the economically disadvantaged persons living in rural India. The model that incorporates the input of rural residents into financial decision-making emerged as the most important finding from this empirical investigation. In addition, the findings from the SEM and route analysis led researchers to the conclusion that customers, who are meant to participate in financial inclusion via the use of FinTech services, should always make an effort to conduct transactions using FinTech-based mobile services. They have no plans to stop utilising FinTech for Financial Inclusion and they like how user-friendly the services are. The majority of respondents make regular use of financial inclusion services based on FinTech, and they believe that this has increased their profitability and savings, in addition to enabling them to transfer money to anybody in the globe at a reasonable cost [69]. People living in rural India feel that fintech can be used to increase rural incomes and can also be utilized to make financial services more accessible to rural residents.

rural India believe that FinTech techniques are simple and straightforward to grasp. The people around them, particularly those who expected them to employ financial inclusion services based on FinTech, also had an impact on their behaviour. A number of users shared the opinion that making use of the financial inclusion services offered by companies that specialize in FinTech has become second nature. People have the impression that the service fees associated with FinTech-based financial inclusion are fair and provide good value for the money spent. They also shown faith in facilitators of circumstances when it came to the provision of FinTech services. However, they concur that it is essential to exercise extreme caution when dealing with financial inclusion services that are based on FinTech. The results of the research indicate that fintech is playing a significant role in the financial inclusion of rural people in the Indian economy. In reality, behaviours intention, service trust, usability, and social influence are having a significant impact on the usage of fintech services.

Trust difficulties are more important in the area of fintech than they are in any other industry: digital goods that manage people's money are directly tied to their financial welfare, therefore trust is crucial, and fintech is delivering it and study results are aligning with the prior literature.

10 IMPLICATIONS

The current study offers newly developed best practises for policy-makers, regulators, and investors to use in a setting of shifting financial conditions. It provides empirical data to determine the crucial success component and another growth engine for FinTech services, and it displays these findings. The findings of this research give critical inputs to decision-makers, so that they may design a plan to manage the present impediments to inclusive financial development. Taking into account the findings of the research, policymakers and other industry players might leverage mobile phone technology to develop new service offerings and policies with the goal of enhancing job opportunities, income, and the general well-being of citizens. This research contributes to the process of developing a citizen dataset of beneficiaries of financial technology. The findings would be of assistance to the mobile service sector in locating an economy of scope that would allow for the provision of services at reduced costs while maximizing their positive impact on society.

Access to financial resources is seen as a key obstacle to growth by large populations in developing countries such as India. The results of this research contribute to the betterment of society in two different ways. To begin, they will be knowledgeable of services such as payment and transfer systems, microcredits, insurance, and savings accounts that are easily accessible. The second benefit of financial inclusion is that it gives formerly marginalised people access to economic expansion. The creation of an inclusive financial sector offers complementary contributions to the economy by drawing in a greater number of participants, which, in the long run, aids in the growth of rural areas. Beyond the importance it has in the business world, entrepreneurship also has a significant impact on society [71]. Poverty may be alleviated by the financing of growth drivers such as the mobilisation of savings and the provision of access to services for low-income individuals, as well as through the improvement of social welfare and vulnerability reduction.

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