

Studying the Effects of Responsible Financial Practices of a Fintech on Sustainable Financial Inclusion

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KEYWORDS

Fintech, sustainability, financial inclusion, attitude, responsible financial practices.

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ABSTRACT

Objectives: This paper studies the impact of attitude towards fintech adoption on sustainable financial inclusion of a population in the extended TAM model.

Methods: The study uses the technology acceptance model, or TAM, for examining the impact of independent variable on the sustainable financial inclusion. Judgmental sampling technique is used for data collection using a structured self-administered questionnaire based on five-point Likert scale. The data collected is then statistically analyzed using SPSS and AMOS software.

Findings: The results reveal that the independent variables, perceived usefulness, perceived ease of use and responsible financial practices have a positive impact on the attitude towards fintech adoption, which in turn has a significant positive impact on sustainable financial inclusion. These findings shall be helpful in policy and strategy formulation of the government and fintech firms in accordance to united nations sustainable development goals and world bank financial inclusion initiatives.

Novelty: The study uses primary data collection, based on self-developed research model after studying the available existing literature on the subject and then analyses it to come to conclusion. The work is novel.

INTRODUCTION

Fintech is an amalgamation of Finance and Technology. It is generally considered a subject which combines finance, technology and innovation [1]. Fintech are characterized by sophisticated financial technology relative to existing technology in that market. Firms that use FinTech are classified as FinTech firms [2]. Finance has been embedded by technology throughout its history and innovations have been the highlights of finance including the earliest uses of money, or the introduction of Arabic numerals and interest theory, or the birth of the bond markets in Italy, creating the joint-stock company and the secondary market for shares in the Netherlands, through modern manifestations through central banking, ATMs and the use of digital currency [3]. From tapping newer segments to exploring the overseas markets, Fintech in India is pursuing multiple targets. The traditionally cash-heavy Indian economy has gleefully grabbed the Fintech opportunity, mainly pushed by an increase in the e-commerce industry, and increase in the penetration of smartphone usage [4]. The Indian government has also focused on and encourages fintech industry to promote new ideas and innovations into the fintech industry [5]. In recent times, various governments are pushing Fintech to help improve financial inclusion with the primary goal of using technology to reduce poverty [6].

Financial inclusion can be defined as the process of bringing the weaker and vulnerable members of society into the domain of the financial system so that they may access timely and adequate credit and other financial products at affordable price [7]. Financial inclusion initiatives are supported by most of the governments as well as international bodies including the World

Bank, International Monetary Fund, G20 and AFDB among others [8]. According to committee, headed by Dr. C. Rangarajan [9], on financial inclusion in India, financial inclusion is defined as the process of ensuring access to financial services including adequate credit timely and at an affordable cost. Ravikumar [10] in his study concluded that banking is a major driver of financial inclusion and exclusion from the financial system brings higher poverty inequality. In another study [11] it was concluded that there is a significant relationship between financial inclusion, financial stability, and financial efficiency. This further led to the conclusion that availability of financial services can ultimately lead to economic growth, reduce poverty, and improve financial stability and financial efficiency, which in turn can achieve sustainable development.

The principal inspiration of Sustainability comes from the Brundtland Report of 1987 [12]. The report of the UN World Commission on Environment and Development, also known as the Brundtland Report. It was this report which adopted the concept of sustainability, stresses upon two concerns that should be reconciled: development and the environment. It defined sustainable development as the development that meets the present needs without compromising the needs of the future generations. Presently, sustainability is almost always seen in terms of three dimensions: social, economic and environmental. United Nations in its Agenda for Development [13] defines sustainability as the development which is a multidimensional undertaking to achieve a higher quality of life for all people. Economic development, social development and environmental protection are interdependent and mutually reinforcing components of sustainable development. UN in 2015 came up with

17 Sustainable Development Goals or SDGs to for achieving sustainable development by 2030. Elkington^[14] coined the triple bottom line approach adding planet (environmental) and people (social) to the existing profit (economic) approach to business focusing on corporate social responsibility.

2. Methodology

2.1. Theoretical background and hypotheses formulation

Technology Acceptance Model (TAM), proposed by Davis^[15] has been considered in this study to provide a theoretical framework for establishing relationship between fintech, financial inclusion, and sustainability. The below variables, based on existing literature have been identified to propose a two-step theoretical model, as in figure 1, that may establish the relationship between the variables - independent variables: perceived usefulness (PU), perceived ease of use (PEOU), responsible financial practices (RFP), and dependent variables: attitude towards fintech adoption (ATTITUDE) and sustainable financial inclusion (SFI). The objective of the study is: To study the impact of attitude towards fintech adoption (ATTITUDE) on Sustainable Financial Inclusion (SFI) in the extended TAM model.

Attitude is considered the major point of human intention and behavior towards any object^[16]. Moro-Visconti^[17] in this study concluded that financial sustainability can be understood by the development of green and inclusive markets in the developing countries. The financial sector has the burden of financing the investments needed to transform the economy into a sustainable economy. The financial sector has been introducing “sustainability” into its decision-making process to reduce carbon footprint and align business strategy towards responsible finance and investments. Fintech are in the forefront of providing financial services relating to sustainability initiatives like applications that employ artificial intelligence techniques to monitor the sustainability metrics cited in firms’ annual reports and financial statements^[18]. COVID-19 pandemic has also demonstrated that there is a strong link between sustainability, finance, and technology, and all countries have been urged to re-think the traditional models and to rely more on technology and sustainability^[19]. Ozili^[20] suggested that financial inclusion increases the sustainable development since it increases the economic opportunities and also the social welfare of banked population. This approach suggests a link between financial inclusion to sustainable development and advocates the adoption of sustainability principles in offering basic financial services to banked population. Basis the study of the existing literature the below hypothesis is formed:

H1: ATTITUDE has a positive effect on SFI.

Perceived usefulness and perceived ease of use are the major constructs of the technology acceptance model. Davis^[21] defines perceived usefulness as “degree to which a person believes that using a particular system would enhance his or her job performance”, where he defines perceived ease of use as “extent to which users believe that applying a specific system would be free of efforts”. Many researchers have earlier concluded that perceived usefulness and perceived ease of use have a significant positive impact on the attitude towards technology adoption in the study of fintech^[22, 23, 24]. Seyal and Rahman^[25], in their research on the acceptance of the use of Internet for academic activities in Brunei, concluded that the biggest variable affecting attitudes toward the use of internet among students is its perceived usefulness with a regression coefficient of 0.625. In a study it was seen that perceived usefulness, perceived ease of use, influence attitudes towards online airlines ticketing usability, positively^[26]. In another study by Triandis^[27] on online transactions for airline tickets booking, it was concluded that the biggest contributor among was the perceived usefulness. A study conducted suggests that responsible financial practices positively impact the financial performance of a fintech^[28].

H2: PU has a positive effect on ATTITUDE

H3: PU has a positive effect on SFI

H4: PEOU has a positive effect on ATTITUDE

H5: PEOU has a positive effect on ATTITUDE

H6: RFP has a positive effect on ATTITUDE

H7: RFP has a positive effect on SFI

Basis the above observation a conceptual research model has been proposed as represented in figure 1.

2.2. Data collection

A structured questionnaire having two sections, was designed to collect data. The first section recorded demographic details while the second recorded measurement items (on Likert scale) and responses were collected for the constructs of the hypothesized model. A pilot study was conducted on 50 respondents from industry and academia and their modifications and suggestions were incorporated in the final questionnaire. Judgmental sampling was used where the majority of respondents were from fields related to fintech, sustainability and financial inclusion. These included segments like banking, microfinance, non-government organization working in sustainability sector, employees of fintech companies, members of Self-Help Groups, government officials working in livelihood missions, others. A total of 610 respondents were interviewed and a total of 550 valid responses were accepted and further analyzed. Most of respondents were working professionals with 60% (330 respondents out of 550) were from urban areas and the remaining 40% from rural parts of the country. Nearly 70% of the respondents have had a formal education till Class 10 or above whereas the remaining 30% of the respondents have not even passed 10th standard.

3. Results and Discussion

3.1. Test of multi-collinearity and common method bias

The data was analyzed on SPSS and AMOS software. SPSS was used to check for multi collinearity and common method bias. The multicollinearity of all independent variables was tested using VIF (variance inflation factor) and tolerance. The values for VIF and tolerance for PU were 2.036 and 0.491, respectively. The VIF for PEOU was 2.044, and the tolerance was 0.489. The VIF and tolerance for RFP were 1.307 and 0.765 respectively. Finally, the VIF for ATTITUDE was 2.233, and the tolerance was 0.448. This demonstrates that there is no case of multicollinearity in the data set, as suggested by James^[29]. The VIF of all independent variables fall between 1.307 and 2.233, whereas the values of tolerance for all independent variables lie between the range of 0.488 and 0.765. This is within the accepted value for tolerance which is more than 0.10, and VIF which is less than 10.0^[30]. Further, Harman’s single-factor test was used to determine if the total variance extracted by one factor was less than 50%^[31]. The overall variance was 33.614%, which is considerably less than the 50% criterion advised by Podsakoff^[32] hence, the study has no common method bias.

3.2. Test of reliability and validity of research model

Further the hypothesized model was examined using two-step structural equation modelling (SEM). At first, the reliability and validity of constructs were examined using confirmatory factor analysis (CFA). The outcomes of CFA indicate the goodness of fit (GOF) of the data. The reliability and validity of questionnaire items are reported in Table 1. Cronbach alpha scores (Table 1) for PU, PEOU, RFP, ATTITUDE and SFI has been 0.927, 0.934, 0.913, 0.944 and 0.880 respectively. The Cronbach alpha score of all items range between 0.872 and 0.944, which is higher than the recommended value of 0.7, indicating acceptable internal consistency^[33, 34]. For establishing convergent validity, three components, factor loading, composite reliability (CR), and average variance explained (AVE), are considered and are reported in Table 1. Factor loadings for PU, PEOU, RFP, ATTITUDE and SFI meet the suggested level of 0.6 or higher^[35], and range between 0.772 and 0.958. CR values for all constructs range between 0.881 to 0.945, which again meets the standard value of 0.6 or above. The values of AVE for all the constructs lie within the range of 0.714 to 0.851, which also confirms the acceptance criterion of convergent validity^[36]. All these important observations are reported in Table 1. The AVE and squared correlation between the constructs were used to determine discriminant validity and are reported in Table 2 and, the squared root of AVE for all constructs range between 0.845 to 0.922, which was greater than the squared correlation between the constructs, suggesting that the constructs used in the analysis met an agreed-upon criterion for discriminant validity^[37].

3.3. Analysis of hypothesized model

The GOF statistics were analyzed to assess the overall predicting power of the model ($\chi^2 = 520.572$, $\chi^2/df = 2.324$, Adjusted Goodness-of-Fit Index = 0.901, Normed Fit Index = 0.949, Tucker-

Lewis Index = 0.963, Comparative Fit Index = 0.970, and Incremental Fit Index = 0.970, Relative Fit Index = 0.937) which showed a reasonably fit data set. Furthermore, the RMSEA value (0.049) and SRMR value (0.044) are less than the recommended guideline of 0.06 and 0.08 respectively. The PClose value of 0.597 is more than the recommended value of 0.05. Further, the observations indicate that the ATTITUDE positively influences the SFI ($B = 0.169$, $p = .00$, and $t = 3.506$). Similarly, PU ($B = 0.155$, $p = .00$, and $t = 3.603$) and PEOU ($B = 0.277$, $p = .00$, and $t = 8.513$) positively influences the ATTITUDE. Also, it was observed that RFP ($B = 0.146$, $p = .00$, and $t = 4.255$) positively affects the ATTITUDE. Thus, the hypotheses H1, H2, H3, H4 stands supported. But PU and RFP do not have any direct effect on SFI since the p value is greater than 0.05. Observations suggest that, PU ($B = 0.055$, $p = .266$, and $t = 1.111$) and RFP ($B = 0.048$, $p = .224$, and $t = 1.215$) do not have any significant effect on the SFI. Hence, H5 and H7 stands rejected and not supported. But PEOU has a direct significant effect on SFI ($B = 0.14$, $p = .00$, and $t = 3.585$). Hence, this suggests a case of mediation by ATTITUDE on PEOU and SFI. These observations are reported in table 3.

3.4. Analysis of mediation

To further investigate, the relationship between PEOU and dependent variable SFI, in presence of mediating variable ATTITUDE bootstrapping was performed (number of bootstrap samples=5000, Bias-corrected confidence interval level= 90). The direct effects of PEOU on SFI were 0.153 whereas the indirect effects of PEOU on SFI were 0.102 taking the total effect of PEOU on SFI to 0.255. Also, it was revealed that both the lower bounds (0.199) and the upper bound (0.309) are positive and the two-tail p value was 0.000 suggesting that the indirect effects are significant. Since, both direct effects and the indirect effects between PEOU and SFI are significant it can be concluded that there is a case of partial mediation. Hence, H6 stand supported suggesting partial mediation. Basis the above analysis the below structural model, as in figure 2, has been derived.

CONCLUSION

The study undertaken aimed to investigate the impact of attitude towards fintech adoption on Sustainable Financial Inclusion in the extended TAM model, testing the relationships between the independent variables PU, PEOU, RFP and dependent variables ATTITUDE and SFI. The study revealed that attitude towards fintech adoption has a significant positive effect on the sustainable financial inclusion of a population. It was also revealed that perceived usefulness, perceived ease of use and responsible financial practices have a significant impact on the attitude towards fintech adoption. These are in concurrence with the earlier studies undertaken with similar objectives [38, 39, 40]. Further the study revealed that perceived usefulness has a direct as well as an indirect impact on sustainable financial inclusion. This suggests that convenience to use a fintech platform will be adopted more easily than other fintech platforms. It can be concluded that the adoption of a fintech platform increases the sustainable financial inclusion of its users. Also, the findings suggests that the usefulness and convenience of a fintech platform results in its early adoption and further increasing the sustainable financial inclusion of its users. A fintech that is useful and easy to use shall be easily adopted and shall help bring more people within the sustainable financial bracket. The study has revealed that the adoption of a particular financial technology is highly dependent on its actual usefulness and convenience to use, where convenient fintech shall always be preferred. Furthermore, the results demonstrate that a fintech which is more responsible shall be preferred and its adoption shall bring its users within the financial inclusion bracket. People have shown considerable concern for sustainability by preferring a responsible fintech. These findings could significantly contribute to the research in the area of sustainable financial inclusion. Also, these findings shall add to the literature on the TAM model and confirm its applicability in the context of fintech and sustainable financial inclusion. The results may help in policy and strategy formulation in accordance to united nations sustainable development goals and world bank financial inclusion initiatives. These findings shall also help fintech firms in developing their platforms suitable for better and faster adoption that may also help in bridging the

financial gap and increase financial sustainability. While the study shall help in understanding the behavior of fintech users toward sustainable financial inclusion, its generalization cannot be assured and the findings must be confirmed by similar studies undertaken in other countries to gain a global perspective. Also, the effects of demographic characteristics like gender, income level, financial literacy, living conditions, could be investigated to get further insights.

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Table File

Table 1. Measurement model analysis: Reliability and Validity

Construct	Items	Factor Loading	Squared Multiple Correlation	Composite Reliability (CR)	Cronbach Alpha	Average Variance Explained
PU	PU1	0.912	0.833	0.928	0.927	0.811
	PU2	0.920	0.846			
	PU3	0.869	0.756			
PEOU	PEOU1	0.949	0.901	0.936	0.934	0.830
	PEOU2	0.819	0.672			
	PEOU3	0.958	0.918			
RFP	RFP1	0.865	0.749	0.914	0.913	0.781
	RFP2	0.943	0.889			
	RFP3	0.840	0.706			
ATTITUDE	ATT1	0.903	0.816	0.945	0.944	0.851
	ATT2	0.940	0.883			
	ATT3	0.924	0.853			
SFI	SFI1	0.924	0.853	0.881	0.880	0.714
	SFI2	0.772	0.596			
	SFI3	0.832	0.692			

Table 2. Discriminant Validity

	CR	AVE	MSV	MaxR(H)	PU	PEOU	RFP	ATTITUDE	SFI
PU	0.928	0.811	0.342	0.931	0.901				
PEOU	0.936	0.830	0.352	0.957	0.585	0.911			
RFP	0.914	0.781	0.150	0.930	0.388	0.196	0.884		
ATTITUDE	0.945	0.851	0.352	0.947	0.548	0.594	0.354	0.922	
SFI	0.881	0.714	0.127	0.905	0.293	0.346	0.179	0.357	0.845

Table 3. Structural Model: Hypotheses Result (***=p<0.001)

Hypotheses	Path			Estimate	C.R.	P value	Result
H1	SFI	<---	ATTITUDE	0.169	3.506	***	Supported
H2	ATTITUDE	<---	PU	0.155	3.603	***	Supported
H3	ATTITUDE	<---	PEOU	0.277	8.513	***	Supported
H4	ATTITUDE	<---	RFP	0.146	4.255	***	Supported
H5	SFI	<---	PU	0.055	1.111	0.266	Not supported
H6	SFI	<---	PEOU	0.140	3.585	***	Supported (Partial mediation)
H7	SFI	<---	RFP	0.048	1.215	0.224	Not supported

Figures

Figure 1. Proposed conceptual hypothesized model

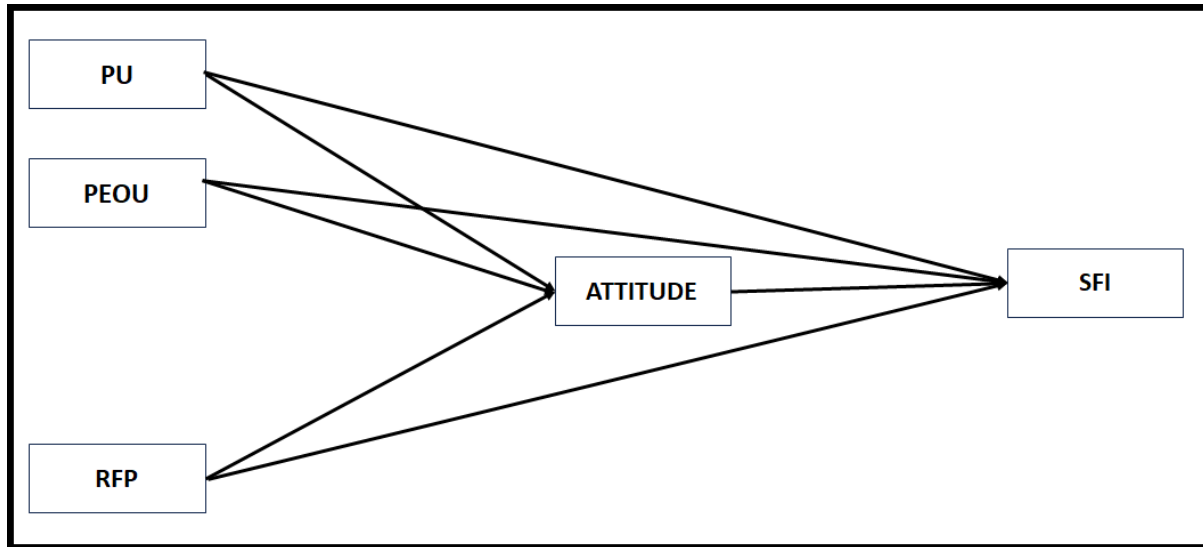


Figure 2. Derived structural model

