

The intention of Fintech adoption in TAM perspective: A SEM approach

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Abstract

Along with the development of the Fintech industry fundamentally during the last decades and the backdrop of the prevailing pandemic situation, the present study examines the intention of Fintech adoption in the perspective of the technology acceptance model (TAM) reflecting the chain relationship among consumer's trust, attitude, and intention of adoption of Fintech. The analysis through structural equation modeling (SEM), with a sample of 110 respondents, we concluded that consumers' attitude of adoption of Fintech has a very high and significant impact on the intention of adoption. The impact of trust on the attitude is also significant but not as high as compared to the attitude on intention. Therefore, the companies should work on generating trust to make the chain effective.

Subject Classification: 91-02.

Keywords: *Fintech, Technology acceptance model, Structural equation modeling, Financial technology adoption.*

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Introduction

The global financial crisis during the year 2008 leads to a paradigm shift in the process and product of the financial sector. Usage of technology in the sector transforms fundamentally. Since then, the global Fintech sector witnessed the Compounded Annual Growth Rate (CAGR) around 33 percent, revenue from \$USD 6 billion in the year 2010 to \$USD 168 billion during 2019 [1]. Instead of some disruption found during 2020 due to the Covid-19 Pandemic, the shift from the traditional mainstream instrument to the digital instrument of investment was very much prominent [2]. Global FinTech Marketplace Report Analysis 2022 estimates that the global market to reach at \$225.1 billion by 2027 with a growth rate of 2.9% CAGR. [3]. According to a report by Ernst & Young LLP, Fintech is anticipated to have \$1 trillion in AUM and \$200 billion in income by 2030 [4]. Collaboration between banks and fintech businesses can increase loan availability to the underserved sector and SMEs [5].

The TAM credited to Fred Davis [6], is based on the perception/ attitude of the potential user towards the use of new technology. The model points out two factors namely predictive usefulness and ease of use for the acceptance of new technology. According to the model, a positive attitude towards the use of technology leads to the increase of personal control, flexibility, and competency, which in turn creates better productivity through an increase in knowledge.

Scope of Study:

Scholars worldwide, [7, 8] and many others have studied the factors like predictiveness and ease of use to understand the consumer behavior of adopting new technology. They use TAM as a theoretical framework of their study in various fields. Since the concept of Fintech became viral for the last decade, the literature on the implementation of TAM in this sector is not very huge. Further, the perception and consumer's behavior towards Fintech services, are significantly influenced by the spread of COVID-19 [9].

Review of Literature:

Hogali studied the importance of consumer trust for IoT (Internet of Things) technology adoption. He developed a model that examines the impact of various social-psychological factors related to consumer's trust on the IoT adoption technology [10].

Roberts, Flin, Millar & Corradi in their study takes personality, motivation, attitude, social and organizational, and conative factors that influence the technology adoption. The factors' impact on the adaptability of technology was analyzed through a case study adopted from oil and gas industry [11].

Zhongqing, Shuai, Shizheng, Luting, & Shanlin developed an improved TAM. In this study government support, innovativeness, brand image, and predictive risk were taken as the determinants of trust for the adoption of Fintech [12].

Fernando, Suryanto, & Surjandy also analyzed the influences of the Ease of Use along with the trust factor on the adoption of Fintech services [13].

Chuang, Liu, & Kao also agreed about the significant positive effect of brand and service trust on the attitude of the customer towards the adaptability of Fintech services [14].

In their study, Kavitha Lal, M. Suvarchala Rani, and P. Rajini discovered three primary characteristics that impact the use of Fintech, namely Conducive, Adaptability, and Security, with Conducive being the most enabling aspect [15].

According to Puschmann, the most important aspects of the burgeoning Fintech sector are finance, cross-processing, investment, and payment [16].

According to the Technology-Organization-Environment (TOE) framework, the three primary contexts viz. technical, organisational, and environmental impact the process of adoption and acceptance of new technology. The study takes Competition, Customer Pressure, Govt. Support and Vendors of Technology and Fintech adoptability by SMEs as the environmental factors of Fintech adoption [17].

The Objective of The Study:

The study is investigating the consumers' behavior of Fintech services adoption. Thus, the objective of the study is to find whether there is a potential intention of using Fintech effects significantly on the behavior to adopt Fintech service. The paper studies the pattern of relationships among the factors viz trust, attitude, and intention of adoption of Fintech services.

Hypothesis:

In this study, the following hypothesis has been tested for -

- Hypothesis 1: Trust in the Fintech product and services positively impacts the attitudes of Fintech adoption.
- Hypothesis 2: Attitude towards the Fintech adoption positively impacts the Intention to adopt.

Methodology:

The study analyzes the factors of Fintech adoption through a TAM. Extensive literature was reviewed for this study. Secondary data were collected from prominent journals, internet resources, and various reports published by the World Bank, IMF, Deloitte, KPMG, etc. The study is quantitative. Primary data was collected through a questionnaire keeping into consideration the validation of the model. The study was conducted after the COVID-19 Pandemic (during the month of June-July 2022) in India with 110 respondents. Apart from the profile related to demography of the respondents, the questionnaire comprises a set of questions related to the three latent constructs - trust, attitude, and intention of adoption of Fintech. To measure the latent variables, 6 observed indicators for trust, 6 observed indicators for attitude, and 2 observed indicators for the intention were used. A five-point Linkert scale was used as a scale of measurement. SEM techniques, as the statistical analysis, to deal with the pattern of relationship among the variables of the study were used. IBM SPSS Amos software was used for the same.

The Model:

The study analyzed three latent variables viz TRUST, ATTITUDE, and INTENTION of adoption of Fintech where the inter-relationship among them is – TRUST effects the ATTITUDE of the consumer and ATTITUDE, in turn, affects the Customer's INTENTION to adopt the Fintech. The following are the variables used in this model.

The unobserved, endogenous variables (1) Product Related Factors (PRF), (2) Social Influence Related Factor (SIF), and (3) Security-Related Factors (SRF) related to the latent variable TRUST. The unobserved, endogenous variables (1) Predictive Usefulness (PU) and (2) Predictive Ease of Use (PE) are related to the latent variable ATTITUDE. The other endogenous variables of this study are (1) INTENTION and (2) ATTITUDE.

The unobserved, exogenous variables are – (1) TRUST and (2) all the error variables.

Test of Pre-requisite Assumptions of Structure Equation Modeling –

The estimated parameters were tested for their unique solution. For that, the model should be identified. The number of data points (=119) in the model is greater than that of estimated parameters (=49). Hence, the model is 'Over Identified'.

The Normality within the data was also tested. The value of skewness and kurtosis of variables lies in between the benchmark of ± 2.0 which exhibits the data found to be normally distributed [18].

Using the AMOS plugins of Gaskination's [19] the validity of the research tool was examined with model zero. Convergent validity measures that construct that are expected to correlate do so. The same was found to be valid. It is obvious from Table 1 that, for all the constructs outcomes of the model validity measures are as $-CR > 0.7$, $AVE > 0.5$, and $CR > AVE$.

Discriminant validity which means when the construct is expected not to relate does not is also found to be valid as for all the contracts. For all the constructs, the $AVE > MSV$ and the $AVE > ASV$.

Table 1
Measures of validity

	CR	AVE	MSV	MaxR (H)	PRF	SIF	SRF	PU	PE	INTENTION
PRF	0.884	0.806	0.747	0.895	0.778					
SIF	0.870	0.534	0.495	0.905	0.704***	0.731				
SRF	0.718	0.877	0.747	0.796	0.664***	0.592***	0.690			
PU	0.859	0.555	0.380	0.889	0.616***	0.382***	0.480***	0.745		
PE	0.783	0.612	0.463	0.585	0.661***	0.380**	0.764***	1.210***	0.642	
INTENTION	0.947	0.693	0.326	0.963	-0.569***	-0.571***	-0.533***	-0.464***	-0.397***	0.832
Note: *** p < 0.001										

The 'Model Fit' of the SEM in this study was checked and the scope of modification in the model was analyzed. The result of which are as under –

Absolute Model Fit: The chi-square value (=201.529 with 70 degrees of freedom) is significant at 0.000. RMSEA is found to be 0.073. The acceptable range is 0.05 – 0.1 [20, pp. 136-162]. GFI is calculated which equals 0.936. The acceptable range is greater than 0.9 [21].

Incremental Model Fit: AGFI for this model is 0.954. The acceptable range for the same is greater than 0.95 [22, pp. 197-201]. Comparative Fit Index (CFI) = 0.912. The acceptable range greater than 0.9 [23, pp. 588-606]

Parsimonious Model Fit: The value of CMIN/DF is calculated as 2.880. The acceptable range is 1 – 5 [24, pp. 562-582]. Since the developed model of the study passed, all the pre-requisite tests for identification, normality, outliers, validity, and model fit, further processing of the data may be performed.

Results and Discussion:

The analysis of measurement models for the constructs namely PRF, SIF, and SRF of the latent variable TRUST has been tested for confirmative factor analysis. The result of this analysis confirms that all the three constructs are positively and highly influenced by their indicator variables. The effectiveness is also found to be significant at the 1% level.

The same has also been performed for the constructs namely PU and PE of the latent variable ATTITUDE. These two constructs are also significantly, positively, and highly related to their indicator variables.

It is seen from Table 2 that, 67 variability percentage of ATTITUDE explained by PU whereas the same is only 49 percent for PE. So far TRUST is a concern, PRF can explain only 7.6 percent of the variability of TRUST, whereas the other two factors can explain relatively much higher – 83 percent of the variance of TRUST can be explained by SIF and SRF can explain around 61 percent of the variability of TRUST. It is to mention that, the impact of both the factors of ATTITUDE with 1% level of sig. However, in the case of TRUST, the impact of SRF is with 5% level.

Table 2
Path coefficient estimates for the constructs - attitude and trust

Dimension	Indicators	B	S.E.	C.R.	P	Beta	R Squared
PU	ATTITUDE	1.000	Reference point			.819	.671
PE	ATTITUDE	1.099	.163	6.744	***	.700	.490
PRF	TRUST	1.000	Reference point			1.004	.076
SIF	TRUST	1.003	.107	9.336	***	.912	.831
SRF	TRUST	.312	.155	2.020	.043	.277	.607

In Table 3, the regression coefficient ($B = 0.789$) signifies that the changes in one unit of TRUST will change positively by 0.789 units of ATTITUDE. This regression coefficient is statistically significant at 1 % level ($P = ***$ indicates the significant value <0.01). Hence, the null hypothesis – 1 has been accepted. i.e., Trust (TRUST) on the Fintech Product and services is positively impacting the Attitudes (ATTITUDE) towards the adoption of Fintech services.

Beta (Standardized Coefficient) of TRUST on ATTITUDE is reported as 0.812 which implies that one unit variation (SD) of TRUST will impact 0.812 units positive variation in the ATTITUDE. It is estimated that the 65.9 percent of its variation of ATTITUDE can be explained by TRUST and the remaining $(100 - 65.9) = 34.1$ percent variation is explained by the other factors (Error / Residuals). Again, the regression coefficient of INTENTION on ATTITUDE is 0.666 is also found to be significant at 1% level. Hence, the null hypothesis – 2 has been accepted i.e., ATTITUDE towards the adoption of Fintech services is positively impact the INTENTION to adopt.

Table 3
Path coefficient estimates for hypothesis testing

Dimension	Indicators	B	S.E.	C.R.	P	Beta	R Squared	Hypothesis
TRUST	ATTITUDE	.789	.113	6.982	***	.812	.659	Accepted
ATTITUDE	INTENTION	.666	.088	7.568	***	.945	.893	Accepted

Beta (Standardized Coefficient) of ATTITUDE on INTENTION is reported as 0.945 which implies that one unit variation of ATTITUDE will impact 0.945 units positive variation in the INTENTION. It is estimated that the 89.3 percent of its variation of INTENTION can be explained by ATTITUDE and the remaining $(100 - 89.3) = 10.7$ percent variation is explained by the other factors (Error / Residuals).

Conclusion:

The study concluded that consumers' attitude towards the adoption of Fintech has a very high and significant impact on the intention of adoption. The impact of trust on the attitude is also significant, but not as high as compared to the attitude on intention. Therefore, the companies should work to generate consumers' trust to get a higher impact on the attitude which in turn leads to the development of intention of the consumers.

The study further concluded that to generate trust among the consumers the company should take attention to the Social Influence Related Factor (SIF) followed by the Security Related Factors (SRF) and Product Related Factors (PRF) respectively. Attitude directly affects the intention of the consumers towards the adaption of Fintech. The finding of the study says that the two factors of attitude which are taken into consideration in this study have a positive significant impact on the attitude of the consumers towards the adaption of Fintech. Thus, the company should also work on the attitude of the consumers. They should work on the usefulness of the services and make the services easy to use.

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