

# Factors that Influence the Customer Adoption of Fintech in Hyderabad, India

Kavitha Lal, M. Suvarchala Rani, P. Rajini

**Abstract:** *In the era of digitalisation, financial institutions are transforming in a sea way, providing new variant of services, and adopting new technology to meet customer expectations. Fintech (an innovation enabled with new technology to provide new applications, services, processes, services and business models by financial service companies) is emerging fast in this digitisation process, and financial service firms are at great advantage applying the same. Penetration of E- commerce and smart phone boosted Fintech in the cash driven economy like India. The existing studies on this subject are limited needing further probe into the matter. This is primarily the reason for undertaking the present study. The study aimed at identifying the factors influencing bank customers in the adoption of Fintech in Hyderabad. This study is empirical in nature based on a sample of respondents, selected by adopting probability random sampling method. The data have been analysed using ANOVA, Exploratory Factor Analysis and Multi Variant Regression Model. The results show that there is no significant difference between venture capital backed funding among select continents. This study identified three factors Conducive, Adaptability and Security which influence the usage of Fintech. Conducive is the most enabling influencing factor for usage and adoption of Fintech among bank customers. It is hoped that the findings of this empirical study, based on a reliable sample and valid statistical analysis would have facilitated adding to the existing contributions on the subject.*

**Key words:** *Fintech, Bank Customers, Consumer behaviour, Technology, Financial services.*

## I. INTRODUCTION

### A. Research Background:

In the era of digitalisation, financial institutions are transforming in a sea way providing new variant of services, adopting new technology to meet customer expectations the convergence of technology with the financial service institutions will lead to build a strong digital economy. Technological innovations are adopted and implemented by financial service companies in their business models for providing a better service to their customer segments. According to Financial Stability Board [1], of the BIS (Bank for International Settlements) Fintech is referred as an innovation enabled with new technology to provide new applications, services, processes, services and business models by financial service companies.

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The advent of Fintech in the early 1950s with an intention to reduce carrying of physical cash, and enhance online banking in 1990s and digitalization in this 21<sup>st</sup> century provided abundant financial opportunities in the form of payment apps, mobile wallets [2]. Global adoption of Fintech will increase on an average by 52% [3]. Projected Fintech transactions values for the year are 5.49 USD trillion in 2019 and expected to rise to 9.82 USD trillion in 2023 with 15.64% of CAGR [4]

### B. Research Objectives:

Studies on the existence of Fintech in India remain mostly unexplored. Researchers on Usage of Fintech among bank customers and the factors that influence the adoption are very limited. Hence the study aims to explore the factors that influence adoption of Fintech while availing financial services. The present research analyses whether there is a significant difference in venture capital backed funding among select continents. The study also identifies the various factors which influence the customer adoption of Fintech and its impact on the usage of Fintech.

### Hypotheses of the study:

The research hypotheses have been formulated, keeping in view the objectives of the study, viz., testing the difference between venture capital backed funding among select continents; analysing the attributes, having a bearing on the usage of Fintech by the bank customers, and testing the relationship between the usage of Fintech by the bank customers and the factors associated with them.

### C. Prior Research:

Banks and other financial institutions are challenging themselves and using cutting edge technologies to deliver vibrant financial services [5]. The generation is witnessing a paradigm shift the way bank consumers interface with banks. A Physical interaction with a banker for consumer experience shifted to online and through apps and wallets. The attitude of the consumers towards using Fintech depends on various factors like easy to use, perceived risk, convenience which in turn influence to adopt [6]. A study conducted in Taiwan [7] found that perceived usefulness is the most influencing factor which affects the consumer attitude positively towards Fintech services. A good experience with Fintech services may influence the behaviour of a consumer which in turn leads to change in the attitude towards using more Fintech services [8] [9] [10]. The boost of Fintech in India started in the year 2015 with a number of start ups emerging in Fintech sector.

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Fintech Investments in India surged from 247 (USD) millions to 1.5 Billion (USD) by the year 2015. Smart phone users in India has been ranked 3rd in the world and provides ample opportunities for Fintech companies [11].

Fintech helps not only to consolidate information technology with financial services but also to administer the latest technology in performing traditional financial services [12].

### II. RESEARCH METHODOLOGY, DATA COLLECTION, ANALYSIS AND RESULTS

#### A. Research Methodology:

The present study is undertaken to study the factors that influence usage of Fintech by consumers in Hyderabad. This research highlights the various important factors that individuals perceive for using Fintech. Empirical research method is adopted.

#### Research Hypotheses:

The research hypotheses have been formulated, keeping in view the objectives of the study, thus:

- (a) H<sub>11</sub>: There is a significant difference between venture capital backed funding among select continents.
- (b) H<sub>12</sub>: The attributes, having a bearing on the usage of Fintech by the bank customers, have latent and interdependent factors associated with them; and
- (c) H<sub>13</sub>: There is a significant relationship between the usage of Fintech by the bank customers and the factors associated with them in Hyderabad region.

#### Sample Size:

A sample of 101 respondents has been selected, confining to Hyderabad, on the basis of random sampling method.

#### B. Data Collection:

Data have been collected from the sample of customers through structured questionnaires. For this, recourse has been made to Google forms.

#### Data Analysis:

The data have been analysed and hypotheses have been tested by using valid statistical tools viz., descriptive statistics, ANOVA, Exploratory Factor Analysis (EFA) and regression analysis using IBM SPSS version 25. Based on the resulting output, the data and results have been interpreted.

#### C. Analysis and Results

The hypothesis H<sub>11</sub> taken for the study has been tested using One-way ANOVA. From the Table 1 it is observed that the p-value is greater than 0.05. Hence, the null hypothesis is accepted. Hence, there is no significant difference between venture capital backed funding among select continents.

This may be because of the application of technologies in financial transactions by the bank customers across the various select continents is observed to be uniform.

**Table 1: ANOVA Results**

Source of Variation	SS	d f	MS	F	P-value	F crit
Between Groups	127.6	2	63.81	2.489	0.124	3.8
	286		429	45	632	85

					29
Within Groups	307.6	1	25.63		4
	067	2	389		
Total	435.2	1			
	353	4			

Source: SPSS output obtained by the authors.

### III. DEMOGRAPHIC FACTORS

A glance at the data on the demographic factors (Table 2) reveals that out of the total sample of 101 bank customers, 48(47.5%) constitute male members while the rest of 53 (52.5%) comprise female. Thus, majority of the sample represented female bank customers.

Regarding age, the distribution of the customers is relatively skewed towards the younger group with 55 (54.5%) in the age group of 18-25 years, and 17 (16.8%) in the age group of 26-35 years. The modal age group is 36--45 years with 16 (15.8%) members belonging therein. A small number of 12 customers (12.9%) are in the age group of 46 years and above.

An analysis of the Occupation of the respondents shows that 30 (29.7%) are Students, 3 (3%) are Government Employees. Others are Private employees 42 (41.6%), Self-employed 17 (16.8%) and Home-makers 9 (8.9%).

Regarding Annual income, the respondent belonging to Rs1-5 lakhs per annum are 7(6.9%), Rs6-10 lakhs are 90 (89.1%), Rs11-15 lakhs is 1 (1%), Rs16-20 lakhs is none and greater than Rs20 lakhs are 3 (3%).

It is observed that 43 (42.6%) of the respondents were married, 57 (56.4%) were unmarried and 1(1%) was divorced.

The data on the educational qualifications of customers indicates that, majority of the respondents i.e.55 (54.5%) are post graduates, 37 (36.6%) are graduates and 9(8.9%) are observed to be not a graduate.

**Table 2: Frequency distribution of Demographic Factors**

S. No.	Variab-les	Category	Frequ-ency	Percen-tage
1	Gender	Male	48	47.5
		Female	53	52.5
		Total	101	100
2	Age	18-25	55	54.5
		26-35	17	16.8
		36-45	16	15.8
		46-55	12	11.9
		>56	1	1.0
		Total	101	100
3	Occupation	Student	30	29.7
		Government Employee	3	3.0
		Private Employee	42	41.6
		Self Employed	17	16.8
		Home maker	9	8.9
		Total	101	100

4	Annual Income (in lakhs)	1_5	7	6.9
		6_10	90	89.1
		11_15	1	1.0
		16-20	0	0.0
		>20	3	3.0
Total			101	100
5	Marital Status	Married	43	42.6
		Unmarried	57	56.4
		Divorced	1	1.0
		Total	101	100
6	Educa-tional Quali-fication	Not a Graduate	9	8.9
		Graduate	37	36.6
		Post Graduate & above	55	54.5
		Total	101	100
7	Freque-ncy of usage of techno-logy	Daily	56	55.4
		Weekly	23	22.8
		Monthly	18	17.8
		Yearly	3	3.0
		Never	1	1.0
		Total	101	100

Source: SPSS output obtained by the authors

An analysis related to frequency of the usage of technology shows that the respondents use daily number 56 (55.4%), weekly 23 (22.8%), monthly 18 (17.8%), yearly 3 (3%) and 1 (1%) never used technology for financial transactions.

### FINTECH AND THEIR ATTRIBUTES

The responses (on likert scale of 1 to 5) given by the bank customers numbering 101, to each of the 17 attributes of the Fintech considered for the study (Table 3), on the average, lie between 1.27 and 2.8, indicating that the bank customers possess all these attributes within them in different degrees on the lower side. The variation in their responses is in the range of 0.508 to 1.140, reflecting consistency in the responses.

**Table 3: Attributes – Mean and Standard Deviation**

	Mean	Std. Deviation
Easy to operate	1.44	0.684
Can be used with smart phone/App/wifi	1.34	0.515
Paperless transaction	1.35	0.573
Saves time	1.27	0.508
Meet my service needs	1.65	0.793
Convenient	1.36	0.593
Anytime service	1.51	0.702
Maintains data security	2.04	0.979
Good service system	1.88	0.804
Maintains brand image	2	0.837
Influenced by friends or family	2.32	1.029
To avail offers	2.26	1.045
Provide new innovative products and services	2.12	0.941
Low Cost of availing service	1.98	0.959
Money can be stolen	2.8	1.14
Cyber attacks	2.65	1.014
No Human interaction	2.15	0.974

Source: SPSS output obtained by the authors

### ATTRIBUTES INFLUENCING USAGE OF FINTECH

The number of Attributes, having a bearing on the factors influencing the usage of Fintech by bank employees, is quite large and are reduced herein into a smaller and manageable number of latent and interdependent factors associated with them, by using Exploratory Factor Analysis (EFA) method. This facilitates determining the underlying structure of factors influencing the usage of Fintech. To validate the use of factor analysis, Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is found. Table 4 shows this value as 0.843, and being more than 0.5 it indicates multivariate normality among the original variables.

**Table 4: KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	of	.843
Bartlett's Test of Sphericity	Approx. Chi-Square	851.968
	Df	136
	Sig.	.000

Source: SPSS output obtained by the authors

The null hypothesis that 'The variables taken into account for the study are uncorrelated' is tested by using the Bartlett's Test of Sphericity. The result, given by the chi-square statistic, shows the value of 851.968, with 136 degrees of freedom and significant value approximating to 0.000. Thus, the null hypothesis is rejected at 0.05 level of significance, and it is concluded that the variables taken into account for the study are correlated, paving the way for the use of factor analysis.

Further, the correlation matrix (Table 5) did not indicate any correlation (r value) greater or equal to 0.8 among the attributes of the study, which depicts that there is no multicollinearity issue in the factor structure.

**Table 5: Correlation Matrix**

	V 1	V 2	V 3	V 4	V 5	V 6	V 7	V 8	V 9	V 10	V 11	V 12	V 13	V 14	V 15	V 16	V 17
V 1	1																
V 2	.600	1															
V 3	.580	.100	1														
V 4	.610	.600	.100	1													







Therefore, a 0.5 loading (R) denotes that 25% (R<sup>2</sup>) of the variance is accounted for the factor. On getting a satisfactory factor solution thus, the factors have been labelled. This process is about assigning the meaning to the factor structure. After examining all the significant variables for a particular factor, the factors were named by following the caveat of accurate reflection of the variables on the factor. The data on the rotated components, for each of the three factors, are given in Table 8. For each factor, the values of loadings indicate the correlations of the original variables with that factor. It is seen that select attributes are highly loaded to factor 1, with values of 0.585 and above. Similarly, the set of attributes highly loaded to the other two factors with values exceeding 0.5 can be identified.

**Table 8: Rotated Component Matrix**

	Component		
	1	2	3
Saves time	.835		
Paperless transaction	.807		
Easy to operate	.793		
Can be used with smart phone/App/wifi	.776		
Convenient	.775		
Anytime service	.617		
Meet my service needs	.585		
Good service system		.854	
Maintains data security		.788	
Maintains brand image		.683	
Low Cost of availing service		.668	
Provide new innovative products and services		.588	
To avail offers		.549	
Influenced by friends or family		.545	
Cyber attacks			.867
Money can be stolen			.828
No Human interaction			.657

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

**Source: SPSS output obtained by the authors**

Based on the factor loadings, the underlying factor structure has been identified as shown in Table 9. These factors are Conducive (which explained 25.323 percent of variance), Adaptability (which revealed 21.637 percent of variation) and finally Security (expressing 14.148 percent of variation). Hence the total variation is accounted to 61.1 percent. From this analysis, we find that the hypothesis that the attributes, having a bearing on the usage of Fintech among bank customers have latent and interdependent factors associated with them is accepted.

**Table 9: Identification of Factors**

Factors	Attributes	Factor Loading
Conducive	Saves time	.835
	Paperless transaction	.807
	Easy to operate	.793
	Can be used with smart phone/App/wifi	.776
	Convenient	.775
	Anytime service	.617

Adaptability	Meet my service needs	.585
	Good service system	.854
	Maintains data security	.788
	Maintains brand image	.683
	Low Cost of availing service	.668
	Provide new innovative products and services	.588
	To avail offers	.549
Security	Influenced by friends or family	.545
	Cyber attacks	.867
	Money can be stolen	.828
	No Human interaction	.657

Source: SPSS output obtained by the authors

### IMPACT OF SELECT FACTORS OF FINTECH AND USAGE OF FINTECH

Having derived the latent factors embedded within the Fintech, their relationship to the Usage of Fintech is examined here using regression analysis. For the three factors that have been extracted, indicating the characteristics of usage of Fintech among bank customers, factor scores have been obtained for each of the 101 respondents of the sample. The factors of Fintech could have an influence on the Usage of Fintech among the bank customers. The regression model used takes Usage of Fintech as the dependent variable and the 3 factors of Fintech as independent variables viz., Conducive, Adaptability and Security. The output is shown in Tables 10 to 12. The value of adjusted R square, given in Table 10, indicates that 43.2 per cent of the variance in the dependent variable Fintech is predicted by the predictor or independent variables (Fintech factors) and Durbin-Watson value is observed as .594 which is less than 2 that makes the model very explanatory. When the goodness of fit of the regression model is tested with F statistic, the output given in Table 11 shows the value of F as 4.954 with a level of significance (.003 for the calculated F) being less than the critical level of significance of 0.05. Hence, we conclude that the regression model is a good fit.

**Table 10: Regression Summary of Fintech and Usage of Fintech**

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.670 <sup>a</sup>	.449	.432	.432	.594

Source: SPSS output obtained by the authors

**Table 11: ANOVA Results for Usage of Fintech and Factors of Fintech**

ANOVA<sup>a</sup>

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	6.759	3	2.253	4.954	.003
Residual	44.112	97	.455		
Total	50.871	100			

Source: SPSS output obtained by the authors

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The regression statistics (Table 12) reveal that the p-values are significant at 5 per cent level and hence the intercept and Factor 1 i.e., Conducive is interpretable. The p-values for the coefficients of Factor 2 Adaptability and Factor 3 Security are greater than 0.05 level of significance and hence are omitted in the regression equation.

**Table 12: Regression Statistics: Coefficients and Test Results for Usage of Fintech and Fintech factors**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error				Lower Bound	Upper Bound
(Constant)	.848	.293		2.895	.005	.267	1.429
Factor 1	.479	.165	.324	2.897	.005	.151	.807
Factor 2	.073	.122	.068	.596	.553	-.170	.315
Factor 3	-.010	.081	-.011	-.118	.907	-.171	.151

Source: SPSS output obtained by the authors

Therefore, the regression equation for usage of Fintech is Usage of Fintech = 0.848+.479\*Conducive.

Thus, the usage of Fintech by the bank customers is mostly influenced by Factor 1 i.e., Conducive. Hence, the research hypothesis that there is a significant relationship between usage of Fintech by the bank customers and the factors influencing Fintech is confirmed.

#### IV. DISCUSSION AND CONCLUSION

The paper discusses the factors which influence the Fintech adoption and its impact on the usage among bank customers. On testing the hypotheses that have been formulated for the study, the results revealed that there is no significant difference between venture capital backed funding among select continents. It proves that investments by venture capitalists across the continents is encouraging and they perceive Fintech as a lucrative avenue across the globe. The demographic factors concerning the customers have been analysed. Next, the attributes, having a bearing on the factors influencing the usage of Fintech by bank employees have been examined. These are found to have a significant bearing on the usage of Fintech by the bank customers. As these attributes are quite large in number (17), they are reduced into a smaller and manageable number of latent and interdependent factors associated with them using factor analysis. Further, the study has identified three main factors i.e., Conducive, Adaptability and Security which influence the usage of Fintech, the most enabling factor being Conducive. It finds that the customer would like to perform bank transactions conveniently in a span of time without approaching bank personally and confident about the services provided by the banks. Other two factors being identified are Adaptability and Security. These two factors are not more enabling as Conducive factor in influencing the usage of Fintech by bank customers. Respondents' annual

income may be considered as the reason due to which adaptability is not an enabling factor. It is observed that most of the respondents annual income is between Rs.6-10 lakhs per annum, with age group between 18 and 25 years due to which it can be interpreted that the amount of transactions they perform using Fintech is nominal and the younger generation is not much concerned of the security issues related to Fintech. Hence, factors adaptability and security are not influencing. Overall, these findings may be considered to facilitate adding to the existing contributions on the influence of Fintech on the customers.

#### LIMITATIONS AND FUTURE RESEARCH

The data set of the study is limited to Hyderabad. The study catering to different factors which influences the usage of Fintech among the bank customers could be done. In future more comprehensive study can be considered taking demographic factors into account and further the study on the intention to adopt and its relation to the actual usage of Fintech among the bank customers could be taken up.

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