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AN EXTENDED TECHNOLOGY ACCEPTANCE MODEL AND THE IMPACT OF EXTERNAL VARIABLES IN ASSESSING CUSTOMER ADOPTION OF INTERNET BANKING SERVICES

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ABSTRACT

Innovation is a constant process and is vital for the Indian banking industry. New services are added to the bunch of banking services frequently. Review of literature indicates that many researchers have studied various determinant factors that influence customer adoption of retail banking services by using the technology acceptance model. But the effect of the demographic variables, security perceptions, confidentiality risks affects the customer adoption of these services. In this study the technology acceptance model has been extended with the introduction of the perceived risk factor. This construct helps to evaluate the determinants that influence the usage of internet banking services and to examine the influence of demographic variables. Based on a data survey of 695 internet banking users of Bangalore and Mysore districts, the results revealed that perceived usefulness and perceived ease of use have an impact on the user's behavior. The results provide recommendations for formulation of customer policies that promote loyalty and future repeated usage.

KEYWORDS

demographic variables, innovative retail banking services, internet banking, perceived risk.

1. INTRODUCTION

Innovation is a continuous process and is considered essential to remain competitive. Indian Banking industry is not an exception for this. Various technological services have been introduced by the banks. These services are dependent on the internet. In the recent years, it has experienced rapid growth in the developed countries and has changed the Indian banking landscape itself. Banks have utilized information technology as a strategic resource to achieve speed, reduction in cost, efficiency and competitive advantage. Innovative retail banking services like ATM, internet banking has brought in the facility of anywhere, anytime banking. Computerization of banks has led to enhanced efficiency, accuracy and transparency in banks operations. These technology banking services have immensely increased the choices offered to the customers to conduct transactions with convenience. Dependence on technology has created a position where banking cannot be thought of without it. Further, it has also enabled the banks to innovate new forms of operation of accounts and newer forms of services to customers particularly in the retail banking sector. These services are in addition to the existing traditional brick and mortar branches. Banks have also understood that the provision of internet based services can offer them more lucrative business opportunities. But all the banking services are not accepted in the same way by the customers. The success of these services depends on the customer acceptance of innovative retail banking services which are dependent on information technology. Any security related issues have the capacity to undermine public confidence in the usage of internet banking services, reducing their effective usage. Earlier researchers like Davis (1989), Sudeep (2008), Bader (2012), Chu Fen Li (2013), Rupanjalnath (2013) have used the Technology Acceptance Model (TAM) to study the customer's attitude and intentions towards innovative retail banking services. TAM has been used as a theoretical framework to study the determinants that affect customer's acceptance behavior. But hardly much attention has been focused towards the role of the demographic variables in adoption of innovative retail banking services. Some of the earlier researchers have stressed upon the fact that these demographic variables are the ultimate drivers of adoption of innovative retail banking services. The TAM's fundamental constructs are not sufficient enough to represent the acceptance of user's behavior towards these innovative retail banking services. Along with factors like perceived use, perceived ease of use, an additional factor called as perceived risk has been introduced. Perceived risk comprises of perceived security and the trust towards these services (Geetha and Mallarvizhi, 2012). Trust is considered as the major link towards all these services. The present study gives an insight of the determinants of the adoption of innovative retail banking services by extending from previous studies. The influence of the demographic variables is addressed in this study. The TAM model has been extended by introduction of the perceived risk construct as innovative retail banking services involves internet based technology. The focus of this study is towards the actual usage of these services. Internet banking was first introduced by ICICI Bank. But there is a difference of acceptance of this particular innovative retail banking service. Customers have readily accepted the ATM as they were tired of standing in long queues in branches for completion of their transactions. Internet banking has not got the same level of acceptance from the Indian customers when compared to the Western countries. This indicates that further acceptance requires some more promotional effort from the banks. Hence it has become vital to check the impact of demographic variables and other factors affecting the actual usage behavior. The internet banking customer's feedback is considered as important as they will be familiar with online banking services. This will help in devising an optimal marketing strategy to meet growing customer's demands and expand the customer database.

2. BACKGROUND OF THE STUDY AND LITERATURE REVIEW

2.1 TECHNOLOGY ACCEPTANCE MODEL (TAM): Technology Acceptance has been defined as the psychological state with regard to the individual's voluntary or intended use of a particular technology (Hendrickson.et.al, 1993). Technology Acceptance Model or popularly known in short form as the TAM is an intention based model developed particularly for explaining or predicting the customer's acceptance of computer technology (Davis,1989; Adams.et.al.1992, Mathieson, 1991, Davis, Bagozzi and Warshaw, 1989). Of the series of models that explain the technology acceptance behavior, the TAM proposed by Davis is considered as the most prominent theory in fields using information technology based services (Chu Fen Li, 2013). Hence in this study TAM has been used to study the continued usage of innovative retail banking services. In measuring the effectiveness of usage of innovative retail banking services, the user's attitude towards using the technology and the actual usage are addressed in the TAM (Davis, 1989). It is in common agreement that the TAM model is valid in prediction of individual's acceptance of new technologies. TAM argues that the actual usage of the technology can be predicted by the customer's behavioural intention to use and attitude towards use which in turn is influenced by the technology's perceived ease of use, perceived usefulness and perceived risk.

2.2 EXTERNAL VARIABLES IN THE TECHNOLOGY ACCEPTANCE MODEL (TAM): Davis.et.al (1989) in their article has observed that "the very purpose of TAM tries to provide a strong basis for tracing the impact of external factors on attitudes, beliefs and intention of customers". The external variables are not particularly mentioned in the original TAM. A number of researchers like Venkatesh & Davis (1996), Chen.et.al (2002), Janelle Rose (2006) have included general computer

self-efficacy, system usability, intrinsic motivation, emotion, image and trust to the TAM. Chu Fen Li (2013) in their article has observed that external variables include user factors that include characteristics such as demographic, personality and situational variables. A number of previous studies related to TAM (Agarwal and Prasad, (1999); Venkatesh, (2000); Burton-Jones and Hubona, (2006)) have found a significant relationship between external variables and technology acceptance. In this research, the external variables that are taken are the demographic factors like age, gender, profession and income.

2.3 PERCEIVED RISK: The risk defined here is the degree to which an individual believes that banking transactions is conducted confidentially and safely through Internet Banking systems. This construct refers to individual’s subjective belief about the probable negative consequences of some type of planned action. This uncertainty is likely to affect negatively the usage intentions of the customer. This is an additional construct introduced to the original TAM model.

2.4 LITERATURE REVIEW: Davis (1989) in his article has argued that information technology has changed the working environment across the globe. But this change is dependent on the user’s willingness to accept or reject the system. If people find that it is hard to use technology, then the advantages of the application are overshadowed. Bomul Suh, Ingoo Han (2002) in their article have examined that ease of use and usefulness have been considered as two important factors used in determining the acceptance of various technologies in the past. Banks have adopted various security systems but in spite of this, previous research has abundant evidence that customers are reluctant to provide personal information on the websites. This shows the level of trust they have built on these technologies. Internet banking is considered risky as the customer and the banker are not in the same place during completion of the transaction. Hence trust acts as a very important influencing factor in internet banking.

Sudeep (2008) has examined a research model and has been constructed on the grounds of perceived usefulness, ease of use, consumer awareness, security concerns, quality of facilities, subjective norms, trust and privacy. From the research the author has found that customers are accepting online banking because it is convenient, accessible, transactions can be completed within a shorter duration, ease of use. But the major acceptance is from customer groups who are working in the IT field, banks. Old age people/ conservative people are not accepting internet banking/online banking as they prefer conventional banking procedures. The major reasons behind the non-acceptance of customers are identity theft, password theft, security concerns, delayed response from server, low bandwidth of internet connections, lack of personal relations and limited banking facilities in the form of no cash deposits/withdrawals. These factors have hindered the growth of internet banking in India.

Il Im.et.al (2008) It was found that customer’s decision varies across different types of products. Hence the effect of perceived use and perceived ease of use on behavioral intention to use will vary across different technologies. Perceived risk affects the customer’s confidence in their decisions. Customers who perceive a higher risk about the technology are affected by how easy it can be used. So, there is a need that bank managers emphasize on ‘ease of use’ when a technology is perceived risky and the ‘usefulness’ when technology is perceived less risky.

Valid Parade Biranvand.et.al (2015) “Resistance to change in online banking and extension Technology Acceptance Model (TAM)” has examined in their article that the rapid growth of internet technology has played an essential role in e-payment area to support e-commerce applications such as online trading, online shopping, internet stock trading and so on. Speed, lower handling cost are the advantages of using online banking, but still customers are not ready to use due to uncertainty and security concerns. Internet banking website must have sufficient content as this plays an important role in influencing the behavior of the customer. Customers who have prior knowledge of the internet do not perceive internet banking as a complex process. Customers resist when they perceive that the system execution requires lot of efforts. Trust has a critical influence on the users’ willingness to use online exchanges of money and personal financial information.

3. NEED/IMPORTANCE OF THE STUDY

Of late banks have made heavy investment on information technology and introduced various innovative banking services. Customers’ satisfaction is very important for the continued usage of these services. In case they are reluctant to use technology for their banking needs, then the return on investment will be low for the banks. So, there is an urgent need to know whether there is an influence of the demographic variables on the effective usage of the internet banking and hence this study.

4. STATEMENT OF PROBLEM

Banks have invested continuously on technology, still the customer’s footprint in the branches have increased. The reasons that can be attributed for such behavior may be lack of customer education in usage of these innovative banking services, negligence or distrust on technology. This study intends to find out how many customers are using internet banking for their banking needs. The more number of customers adopting this service, then the product can be considered as effective else non effective. Then the investment will be an additional cost incurred by the bank, when technology is not utilized to the maximum extent. Customers perceive some risk and feel insecure to utilize online banking services. The survey indicates that internet banking has not been able to carve a niche in the minds of the customers.

5. OBJECTIVES OF THE STUDY

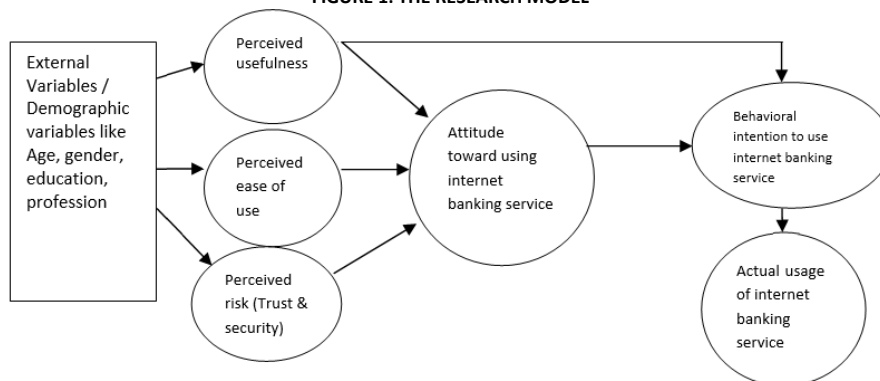
The objectives of the study are as follows:

1. To examine the influence of demographic variables/external variables in the adoption of internet banking.
2. To analyze customer’s attitude and perceived beliefs towards internet banking.
3. To give suggestions for better adoption of internet banking based on the findings of the study

6. METHODOLOGY

6.1 RESEARCH MODEL AND THE HYPOTHESES

FIGURE 1: THE RESEARCH MODEL



Source: Created by Author

Totally there are ten variables in this research model, out of which four variables are the measured variables and six variables are the latent constructs. The measured variables are the demographic variables like age, education, gender and profession. The latent variables are perceived ease of use, perceived usefulness and perceived risk, attitude towards using internet banking services, behavioral intention to use internet banking services and the actual usage of internet banking

services. Each of the demographic variables is mediated by perceived ease of use, perceived usefulness and perceived risk. They in turn help in the formation of the attitude towards usage of internet banking services. The attitude influences the behavioral intention to use and in turn it influences on the actual usage of internet banking services. The following hypotheses have been framed to study these relationships.

6.2 RESEARCH HYPOTHESES OF THE STUDY

- H1: "Demographic variables (Age, education, gender and profession) have significant influence on perceived usefulness on usage of Internet Banking".
- H2: "Demographic variables (Age, education, gender and profession) have significant influence on perceived ease of use on usage of Internet Banking".
- H3: "Demographic variables (Age, education, gender and profession) have significant influence on perceived risk on usage of Internet Banking".
- H4: "Perceived ease of use has positive influence on perceived usefulness to use Internet Banking".
- H5: "Perceived risk has negative influence on perceived usefulness on usage of Internet Banking".
- H6: "Perceived ease of use has positive influence on attitude to use Internet Banking".
- H7: "Perceived usefulness has positive influence on attitude towards using Internet Banking".
- H8: "Perceived risk has negative influence on attitude towards usage of Internet Banking".
- H9: "Attitude towards using positively affects the behavioral intention to use Internet Banking".
- H10: "Behavioral Intention to use positively affects the actual usage of Internet Banking".

7. RESEARCH METHODOLOGY

The study was undertaken from May 2016 to November 2016. Primary data was collected through a structured questionnaire based on internet banking.

7.1 QUESTIONNAIRE DESIGN: For the study primary data was collected using likert based questionnaire. This questionnaire was developed after review of literature and discussions with bank managers and experts. The first part of the questionnaire contained questions linked to collect the customer’s demographic information while the second part contained questions related to the perception regarding usage of the computer, internet and internet banking services.

7.2 DATA COLLECTION AND ANALYSIS: The respondents were continued users of internet banking for this study. A questionnaire was distributed to around 1000 respondents out of which only 800 questionnaires were received. Out of this only 695 were valid, remaining were half filled. The effective response rate was thus 86.87%. Thus the survey consisted of 695 internet banking respondents. The collected data was analyzed using the Structural Equation Modeling (SEM) method. Structured Equation Modelling was applied to evaluate the pattern of inter correlations amongst the constructs and to test the related proportions of the theoretical model developed in the study. SEM model is ‘a priori hypothesis about a pattern of linear relationships amongst a set of observed and unobserved variables’. SEM explains the relationships between the multiple variables. The structure of interrelationships is expressed through a series of equations which is similar to series of multiple regression equations. These equations depict the relationships amongst the dependent and the independent constructs. SEM model is different from the other multivariate procedures. It takes a confirmatory analysis rather than an exploratory analysis to analyze the data. SEM is most commonly used in behavioural research. SEM model is subdivided into a measurement model and structural model. The measurement model defines the relationship between the observed and the unobserved variables. It specifies the manner by which particular latent variables directly or indirectly influence the changes in the values of certain other latent variables in the model. The measurement variables concentrate on validation of the model and do not explain the relationships with the constructs. It signifies how the measurement model come together to represent the constructs and is used for validation and reliability checks. CFA is a way of analysing how well the measured variables represent a particular construct.

8. RESULTS AND DISCUSSION

TABLE 8.1: DEMOGRAPHIC PROFILE OF THE RESPONDENTS

Characteristics	Distribution	Number of respondents	Percentage
Age	Less Than 25 years	122	17.55
	26-35 years	332	47.76
	36-45 years	166	23.88
	Above 45 years	75	10.79
Total		695	
Gender	Male	398	57.26
	Female	297	42.73
Total		695	
Education	SSLC	122	17.55
	Graduate	375	53.95
	Master Graduate	148	21.29
	Professional	50	7.19
Total		695	
Profession	Government Employee	107	15.39
	Private Employee	400	57.55
	Self employed	113	16.25
	Student	42	6.04
	Housewife	30	4.31
	Others	3	0.43
Total		695	

Source: Primary Data

From Table 8. 1, it is clear that majority of the respondents (47.76%) are between 26-35 years, 23.88% are in the age group of 36-45 years, 10.79% are in the age group of above than 45 years, 17.55% are in the age group of less than 25 years. 57.26% of the respondents are male respondents and 42.73% are female. 53.95% of the respondents are graduates, 21.29% are master degree holders, 17.55% respondents are only SSLC and 7.19% are professional degree holders. 57.55% are private employees, 16.25% are self-employed, 15.39% are government employees, 6.04% are housewives and 4.31% are students and 0.43% are following other profession.

TABLE 8.2: HOURS OF INTERNET BROWSING FOR BANKING NEEDS PER WEEK

Frequency of Internet Browsing for banking needs per week	Number of respondents (%)
Hardly any time	42.73
1-5 hours	52
5-10 hours	3.91
10-15 hours	0.87
more than 15 hours	0.48

From table-8.2 it can be observed that 52% of the respondents use the internet for their banking needs between 1-5 hours in a week while 42.73% of the customers hardly use the internet. Only 3.91% of the customers use it for 5-10 hours in a week, 0.87% use it for 10-15 hours and 0.48% use it more than 15 hours in a week.

ANALYSIS OF THE MEASUREMENT MODEL

Confirmatory Factor Analysis (CFA) was used to assess the measurement model. The objective of confirmatory factor analysis is to test whether the data fit into a hypothesized measurement model. In confirmatory analysis factor loadings are interpreted as regression coefficients maybe in standardized or unstandardized form. The confirmatory factor analysis model focuses mainly on the link between factors and measured variables within the framework of SEM, it is called as the measurement model. CFA allows the researcher to test the hypothesis that a relationship between observed variables and their underlying latent constructs exists. The results from the fit measures indicated a good fit for the model. As shown in table 3, the ratio of chi-square to degrees of freedom is 2.97, lesser than the recommended value. The Goodness of Fit Index (GFI) is above the recommended value while the, NFI (Normed Fit Index), CFI (Comparative Fit Index) are close to the recommended value of 0.90. The RMSEA (Root Mean Square Error of Approximation) is less than the recommended value. These results provide evidence that the data supports the model.

TABLE 8.3: FIT INDICES FOR MEASUREMENT MODEL AND STRUCTURAL MODEL FOR INTERNET BANKING USERS

Fit Indices	Measurement Model	Structural Model	Recommended Value
Chi-square/df (χ^2/df)	2.971	2.96	< 3
GFI (Goodness of Fit Index)	0.933	0.928	> 0.9
NFI(Normed Fit Index)	0.816	0.878	> 0.9
CFI(Comparative Fit Index)	0.864	0.845	> 0.9
RMSEA(Root Mean Square Error of Approximation)	0.056	0.053	< 0.10

To verify the suitability of the measurements used in the data multi item scales have been subjected to reliability and validity tests in the study. Cronbach alpha is a measure of reliability based on the internal consistency of the constructs of the instrument. It is expressed as a number between 0 to 1. Internal consistency explains the degree to which all the items in a test quantify the same concept or construct and hence it is connected to the inter relatedness of the items within the test. Cronbach alpha above 0.7 measure have been used in the study (Nunnally, 1978). Composite reliability when greater than the 0.7 is considered as adequate. Discriminant validity refers to testing statistically whether two constructs differ. In continuation, the rule of thumb is that the average variance extracted (AVE) values should be greater than corresponding squared inter-construct correlation estimates (SIC) in the model. Table 8.4 showed these tests confirmed the reliability and the validity of the data.

TABLE 8.4: RESULTS OF CFA FOR MEASUREMENT MODEL

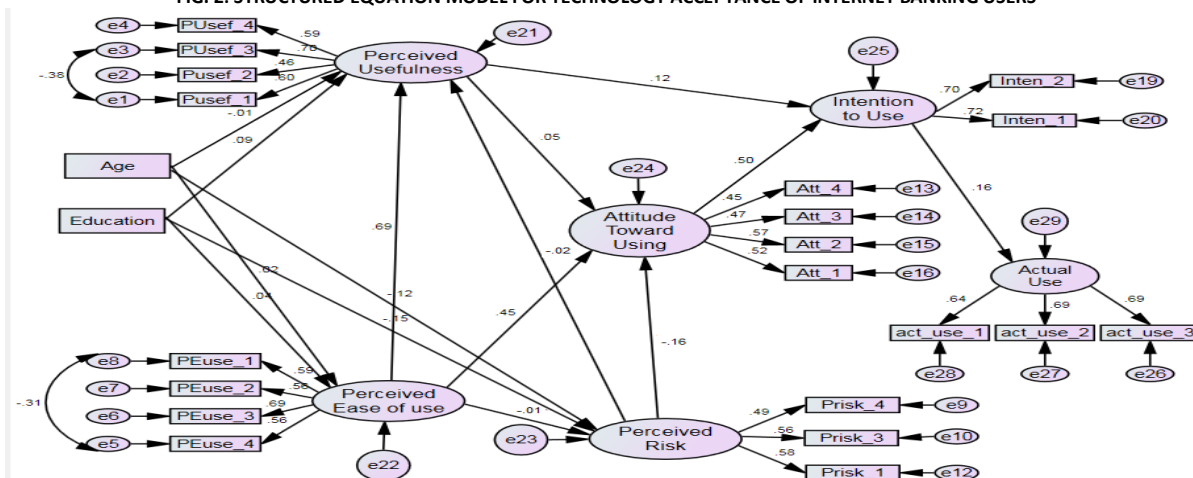
Latent Variable	Items	Standardized Loadings	Composite Reliability	Cronbach Alpha	Average Variance Extracted (AVE)
USEFULNESS	PUseful_1	0.580	0.680	0.633	0.351
	PUseful_2	0.698			
	PUseful_3	0.462			
	PUseful_4	0.607			
EASE TO USE	PEuse_1	0.586	0.693	0.661	0.362
	PEuse_2	0.560			
	PEuse_3	0.692			
	PEuse_4	0.560			
PERCEIVED RISK	Prisk_1	0.601	0.548	0.556	0.291
	Prisk_3	0.597			
	Prisk_4	0.406			
ATTITUDE TOWARDS USE	Attitude_1	0.524	0.571	0.566	0.251
	Attitude_2	0.563			
	Attitude_3	0.465			
	Attitude_4	0.445			
INTENTION TO USE	Intention_1	0.722	0.669	0.668	0.502
	Intention_2	0.696			
ACTUAL USE	Act_use_1	0.642	0.711	0.710	0.451
	Act_use_2	0.688			
	Act_use_3	0.684			

Source: SPSS result

ANALYSIS OF THE STRUCTURAL MODEL

After validating the measurement scale, the same set of fit indices was applied to analysis of the structural model. Table 7.3 shows the fit indices for the structural equation model also ($\chi^2/df = 2.96$, GFI= 0.928, NFI=0.878,CFI=0.845, RMSEA=0.053). Figure 2 illustrates the results of SEM analysis in the form of a path diagram, where TAM was extended by introducing the perceived risk construct regarding trust and security. The four external variables/demographic variables age, education, gender and profession was introduced. In the figure, the significance of all paths co-efficient is indicated and non-significant paths are removed.

FIG. 2: STRUCTURED EQUATION MODEL FOR TECHNOLOGY ACCEPTANCE OF INTERNET BANKING USERS



Source: SPSS result

TABLE 8.5: EFFECT OF RESEARCH MODEL: STANDARDIZED REGRESSION WEIGHTS OF INTERNET BANKING USERS USING BEHAVIOURAL INTENTION AS THE

		DEPENDENT VARIABLE				
Relationships between independent and dependent variable		Estimate	S.E.	C.R.	P	
Ease	<---	Educ	0.044	0.020	1.003	0.316
Ease	<---	Age	0.018	0.019	0.411	0.681
Risk	<---	Age	-0.123	0.031	-2.397	0.017*
Risk	<---	Educ	-0.153	0.035	-2.933	0.003*
Risk	<---	Ease	-0.006	0.083	0.107	0.915
Useful	<---	Ease	0.688	0.094	8.868	0.000*
Useful	<---	Risk	-0.023	0.044	0.451	0.651
Useful	<---	Educ	0.086	0.022	2.226	0.026*
Useful	<---	Age	-0.012	0.020	-0.323	0.747
Attitude	<---	Useful	0.053	0.085	0.581	0.561
Attitude	<---	Ease	0.449	0.119	4.221	0.000*
Attitude	<---	Risk	-0.158	0.052	-2.398	0.016*
Intention	<---	Attitude	0.502	0.110	6.028	0.000*
Intention	<---	Useful	0.119	0.067	2.157	0.031*
Actual_use	<---	Intention	0.162	0.072	2.933	0.003*

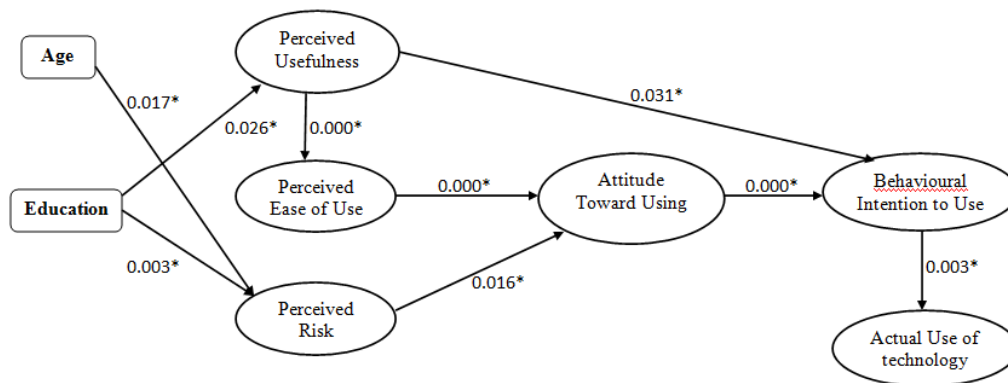
Source: SPSS results

* Significant at 5 % level Estimate=Standardised Beta Co-efficient (β), S.E=Standard Error, CR= Critical ratio

REGRESSION RESULTS FOR INTERNET BANKING USERS

For conducting the regression analysis the dependent variable is the behavioural intention to use. The output of the regression analysis is also used to test the hypotheses H1, H2, H3, H4, H5, H6, H7, H8, H9 and H10. Absolute values of the standardized regression (equivalent to the standardized Beta co-efficient) of the independent variables perceived usefulness, perceived ease of use, perceived risk, attitude towards usage which is having considerable effect on the dependent variable behavioural intention to use internet banking is examined. Accordingly, it is observed that among the external/demographic variables only education has a direct positive and significant influence on Perceived usefulness of Internet Banking (β=0.086; CR=2.226, p<0.05). Likewise, Age and Education has a negative and significant influence on perceived risk of using Internet Banking (β= - 0.123; CR= - 2.397, p<0.05) and (β= - 0.153; CR= - 2.933, p<0.05) respectively. On the other hand, perceived ease of use has a significant and positive link with attitude towards using Internet Banking (β=0.449; CR=4.221; p<0.05). Furthermore, perceived ease of use is found to be significantly related to perceived usefulness of Internet Banking (β=0.688; CR=8.868; p<0.05). Likewise, perceived usefulness is found to be directly influencing the intention to use Internet Banking (β=0.119; CR=2.157; p<0.05). Attitude towards using Internet Banking is found to be directly influencing the intention to use Internet Banking (β=0.502; CR=6.028; p<0.05). Finally, it is observed that intention to use has significant influence on actual use of Internet Banking (β=0.162; CR=2.933; p<0.05). Furthermore, perceived risk has a negative and significant effect on attitude towards usage of Internet Banking (β= - 0.158; CR= - 2.398; p<0.05). Perceived ease of use does not have any negative effect on the perceived risk on usage of Internet Banking. The same has been indicated in the figure given below:

FIG. 3: RESULTS OF THE STRUCTURAL MODEL OF INTERNET BANKING USERS WITH ONLY SIGNIFICANT PATHS



Source: SPSS results

EFFECT OF GENDER ON THE USAGE OF INTERNET BANKING

TABLE 8.6: RESULTS OF INDEPENDENT T-TEST BETWEEN GENDER AND PERCEIVED USEFULNESS, PERCEIVED EASE OF USE AND RISK DIMENSIONS FOR ATM & INTERNET BANKING USERS

Variable	Gender	N	Mean	SD	t-value	p-value
Perceived Usefulness	Male	687	3.82	0.530	1.988	0.046*
	Female	338	3.75	0.518		
Perceived Ease of Use	Male	687	3.71	0.557	0.778	0.437
	Female	338	3.68	0.555		
Perceived Risk	Male	687	2.54	0.820	1.389	0.165
	Female	338	2.47	0.768		

Source: SPSS results

* Significant at 5 % level

There is a significant difference (see table 8.6) in mean ranking scores between male and female respondents with respect to **Perceived Usefulness** of Internet banking (t= 1.998, p<0.05) dimension at 5% level of significance. As the mean score of Male respondents (mean = 3.82) is higher than female (mean=3.75) respondents, one would conclude that Male respondents have better edge over female respondents in saying that there is perceived usefulness in using internet banking. On the other hand, there is no significant difference in mean ranking scores between male and female respondents with respect to **Perceived Ease of Use** of internet banking (t= 0.778, p>0.05) dimension at 5% level of significance. There is significant difference in mean ranking scores between male and female respondents with respect to **Perceived risk** of Using of internet banking (t= 1.389, p>0.05) dimension at 5% level of significance.

TABLE 8.7: SCHEFFE’S POST-HOC TEST RESULT BETWEEN PAIR OF OCCUPATION UNDER PERCEIVED USE, PERCEIVED EASE OF USE, PERCEIVED RISK DIMENSION – INTERNET BANKING USERS

Variables	Occupation	Occupation	Mean difference	Std.Error	p-value
Perceived ease of use	Private employed	Self employed	0.153	0.046	0.000*
Perceived usefulness	Private employed	Home maker	0.209	0.066	0.000*
Perceived risk	student	Private employed	0.786	0.100	0.000*

Source: SPSS results

From the Scheffe’s test result seen in Table –8.7, we see that there is a significant (statistically) difference in mean score of private employed respondents and self-employed respondents with respect to Perceived Ease of Use dimension. The positive mean difference indicate that Private employed respondents seem to have greater tendency of strongly agreeing that there is perceived ease of use in using internet banking as compared to self-employed respondents. There is a significant (statistically) difference in mean score of private employed respondents and Homemaker respondents with respect to **Perceived Usefulness** dimension. The positive mean difference indicate that Private employed respondents seem to have greater tendency of strongly agreeing that there is perceived usefulness in using internet banking as compared to Housewives respondents. There is a significant (statistically) difference in mean score of Students and Private Employed respondents with respect to **Perceived Risk** dimension. The positive mean difference indicate that students seem to have greater tendency of strongly agreeing that there is perceived risk in using internet banking as compared to private employed respondents. Objective 1 and 2 of the study are achieved.

HYPOTHESES TEST RESULTS

TABLE 8.8

Research Hypotheses	Result
H1: Demographic variables have significant influence on perceived usefulness on usage of Internet Banking.	Supported
H2: Demographic variables have significant influence on perceived ease of use on usage of Internet Banking	Supported
H3: Demographic variables have significant influence on perceived risk on usage of Internet Banking	Supported
H ₄ : Perceived ease of use has positive influence on perceived usefulness to use Internet Banking	Fully supported
H ₅ : Perceived risk has negative influence on perceived usefulness on usage of Internet Banking	Not supported
H ₆ : Perceived ease of use has positive influence on attitude to use Internet Banking	Fully supported
H ₇ : Perceived usefulness has positive influence on attitude towards using Internet Banking	Supported
H ₈ : Perceived risk has negative influence on attitude towards usage of Internet Banking	Supported
H ₉ : Attitude towards using positively affects the behavioral intention to use Internet Banking	Fully supported
H ₁₀ : Behavioral Intention to use positively affects the actual usage of Internet Banking	Fully supported

9. FINDINGS OF THE STUDY

1. It is observed that the adoption level of innovative retail banking services was more in the male respondents (57.26%) rather than the female respondents (4.23%). Internet banking, has been chosen by the youth (25-35 years of age, 62%) who prefer more for usage of innovative retail banking services. This might be the fact that the youth are tech savvy, have better earnings, no time to visit the branch and so on.
2. Private employee respondents were better adopters of innovative retail banking services when compared to the Government employees or the self-employed individuals. Graduates, post graduates & professionals have opted more for the usage of innovative retail banking services.
3. 306 customers are using Internet Banking on a monthly basis, followed by once or twice a week usage or fortnightly usage. This clearly indicates that internet banking is yet to pick up amongst the customers. On observation of the various functions used by the innovative retail banking services users, it was observed that basic functions were more opted by the users rather than the value added functions.
4. It is found that out of 695 internet banking respondents, 25.51% (this represents 52.37% of respondents) have made a statement enquiry. 24.44% (this represents 50.16% of respondents) have made bill payment, 21.30% (this represents 43.72% of respondents) have transferred funds from their account, 5.12% (this represents 10.50% of respondents) have made a cheque request using internet banking, 4.70% (this represents 9.66% of respondents) have used online loan applications for taking a loan, 2.98% (this represents 6.10% of respondents) have made a DD request online while 15.93% (this represents 32.71% of respondents) have used internet banking for doing online shopping. Remaining 115 respondents are dormant users. 330 respondents are non-users of internet banking.
5. In this study, the TAM constructs perceived ease of use and perceived usefulness were found to have significant effect on attitude to use. So, effect of perceived ease of use on attitude towards usage of internet banking service declines as the frequency of usage increases. Customers pay more importance to perceived usefulness.
6. The result of the research study shows that there is a partial effect of demographic variables on the four key constructs for usage of internet banking. Perceived risk exerted a stronger effect on attitude towards internet banking. Education has a strong link towards usage of internet banking. Higher the education level, customers easily accept this innovative banking service.

10. SUGGESTIONS FOR THE STUDY

1. Banks should devote more time and effort to improve the efficiency, effectiveness and user-friendliness of internet banking system and publicize the benefits of internet banking to augment the customer base.
2. Banks should concentrate on improving internet banking security features, privacy protection and take proper precautions to ensure the security of their customer’s online transactions.
3. Banks need to create workshops or virtual environment for customers in different public places, shopping malls or educational institutions to give information about online banking and its benefits to public so that people get awareness positive attitude towards these innovative retail banking services.
4. Banks need to conduct regular surveys to understand the customer’s requirements and analyze the factors that can influence their intention to accept and fully utilize innovative retail banking services like internet banking.
5. The media such as FM radio, AIR and various television channels may be used to promulgate the various advantages of online banking services.
6. Customers possess the knowledge about various innovative retail banking services, particularly with respect to Internet Banking. But majority of them are unable to utilize these services as it is not affordable to all segments of society. Innovative retail banking services reduce the cost of the transaction and this must be passed on to the final customer also.

11. CONCLUSION

The main purpose of this study was to identify the critical factors affecting the actual use in customer’s behavior in the Indian internet banking context and explore the role of demographic variables. The research model was based on the extended TAM and incorporated the perception of trust and security to capture the characteristics of internet enabled technology. Data was collected through a questionnaire survey from 695 respondents. SEM was used to test the relationships among the constructs hypothesized in the model. The results supported the appropriateness of the extended research model in predicting the user behavior. The study also confirmed the influence of demographic variables on the TAM constructs.

12. LIMITATIONS OF THE STUDY

1. The study is limited only to Internet banking services in Bangalore and Mysore.
2. The customer's responses may be biased.

13. SCOPE FOR FURTHER RESEARCH

Internet banking service only has been considered in this study. In the future mobile banking adoption, impact of demonetization on these innovative retail banking services can be taken up.

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