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A Study on Measuring Intentions To Use Internet Banking By Extending TAM

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Abstract

Internet banking has changed the way banking is done. It has been far more efficient and effective then it was decades before. Customers can now avail banking services at the convenience of their time and place. But the adoption rate has not been high as compared to other countries. Thus it becomes necessary to identify factors which influence adoption of internet banking. This study focuses on TAM and has extended it by using additional factors namely self efficacy and customer awareness. The results showed that all the four factors had positive significant influence on intention to use internet banking. Basic TAM variables Perceived ease of use, perceived usefulness positively affect intentions suggesting that if customers perceive internet banking as easy and beneficial, they will be encouraged to use internet banking. Self efficacy had the highest beta value and customer awareness significantly influenced intentions suggesting customers favorably seek help for transacting on internet banking and more awareness regarding benefits and usage of internet banking helps in more adoption.

Keywords: Self efficacy, Customer awareness, Perceived ease of use, Perceived usefulness, TAM

Introduction

Traditional ways of doing banking have changed with emergence of mobile and wireless technologies which has removed the geographical boundaries. Customers have no longer to travel to banks and wait for their turn. Internet banking has removed such barriers and has given anywhere, anytime banking. Internet banking is an electronic banking system where customers can access bank accounts and can do financial transactions through this medium. It is an alternative delivery channel for almost all the banking transactions. Thus, the focus is now shifting to innovative services for better customer experience and satisfaction. Banks are no more Mass bank but Class banks. The improvements in technology have led banks to give this to customers. With technology, banks can now give cost effective products and services, fast, efficient and convenient banking systems.

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This research paper focuses on one such technology, Internet Banking. Internet banking offers benefits to both customers and banks in terms of cost, time, efficiency, convenience, ease etc. for any economy to grow faster it is necessary to have efficient banking system in place and internet banking is a great way to achieve that. But the adoption of these services is not very high in India. India has internet user base with 566 million till December 2018 according to IAMAI. While the number of online banking users will be 150 millions by 2020, according to report published by Facebook and BCG (Boston Consulting Group).In spite of a drastic increase in the number of internet users and the statistics on channel usage indicates that only 7% of transactions occur through the internet banking in India, whereas, in the United States 50% of transactions occur through this channel.

This reluctance on the part of customers to use internet banking calls for a need to study about the underlying factors influencing individual consumers' decision to adopt internet banking. People in India are still comfortable with traditional banking rather than a virtual bank with no human interaction. This research focuses on how people feel about their capabilities to perform transactions on self service platform like internet banking. It also tries to identify whether customer awareness of internet banking helps in adoption of internet banking or not.

Literature Review

WadieNasri (2011) in his paper tried to find factors influencing adoption of IB in Tunisia. He sampled 253 respondents and used Factor analysis and Regression technique to study relationship. The main factors considered for study are: convenience, perceived security, risk, prior internet knowledge and information on online banking. All the factors except information on online banking had important effect on adoption of internet banking. The study also found that demographic variables affect the adoption like young adults are more likely to adopt and more educated people were more likely to adopt internet banking.

Ariff, M. S. M., Yeow, S. M., Zakuan, N., Jusoh, A., &Bahari, A. Z. (2012) targeted the potential young users of internet banking. They used TAM and extended the model by using self efficacy along with perceived usefulness (PU), perceived ease of use (PE) and perceived credibility (PC). The results of multiple regression analysis revealed that self efficacy positively influenced perceived usefulness, ease of use and credibility. Furthermore, PE, PU and PC had positive influence on behavioral intentions.

Hussein A., and MohamadSaad (2016) used TAM to understand the user intentions using various variables. The research showed similar results as TAM. Perceived usefulness and perceived ease of use had positive impact on behavior intentions. Perceived risk had a negative impact. Awareness of benefits of internet banking and self efficacy had significant influence on perceived ease of use.

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Kusuma Chandra Kirana, Ririn Tri Ratnasari, TikaWidiastuti (2018) investigated the influence of Subjective norms, Government Support and Self-Efficacy on intention to use Internet Banking. The study was survey based and total sample size taken was 341. Based on the research study, they found that subjective norms are influence to intention internet banking but statistic result showed no significance. Self Efficacy was important and had positive influence on intention to use internet banking along with government support which also showed positive significant influence.

Sindhu Singh, Srivastava R. (2018) purpose was to find factors influencing adoption of mobile banking in India. They tried explaining customer intention to use MB by 6 constructs like perceived ease of use (PEOU), computer self-efficacy (CSE), social influence (SI), perceived financial cost (PFC), security(S), and trust (T). Survey of 855 bank customers was carried out. They found that significant factors were perceived ease of use, perceived financial cost, computer self-efficacy affect customers' intention to adopt mobile banking.

Model Proposed

The study has used Technology Acceptance Model as base and additional constructs were added; Self efficacy and customer awareness. Large number of studies has shown the importance of these constructs in adoption process. Technology Acceptance Model (TAM), which was developed by Fred Davis in 1989, is one of the oldest and most accepted models. The basic model uses two constructs viz. Perceived usefulness (PU) and Perceived Ease of Use (PEOU) as significant factors that affect acceptance of internet banking. According to Davis (1989), PEOU is "the degree to which a person believes that using a particular system would be free of effort" and PU is "the degree to which a person believes that using a particular system would enhance his or her job performance." In context to internet banking, PEOU implies that using internet banking is easy to understand and pose no difficulty in using it while PU implies that using internet banking will provide benefits like less time, fewer charges, less travelling and round the clock access to bank transactions.

Self-efficacy is person's ability to perform particular task. In the context of internet banking, self efficacy is customers' belief that he has capability to transact on internet banking. If customers feel comfortable and confident in using internet banking, there are more chances that he will adopt internet banking. Thus it is important to design a system which is user friendly, clear and understandable. Customer awareness also plays an important role in influencing adoption of internet banking. It has been observed that many people are not aware of internet banking services fully or they are unaware of the benefits and convenience associated with it. Many a times, the bank employees are not eager to tell or teach these services to customers. They lack such inclination to help customers. Thus in this study, four variables are considered

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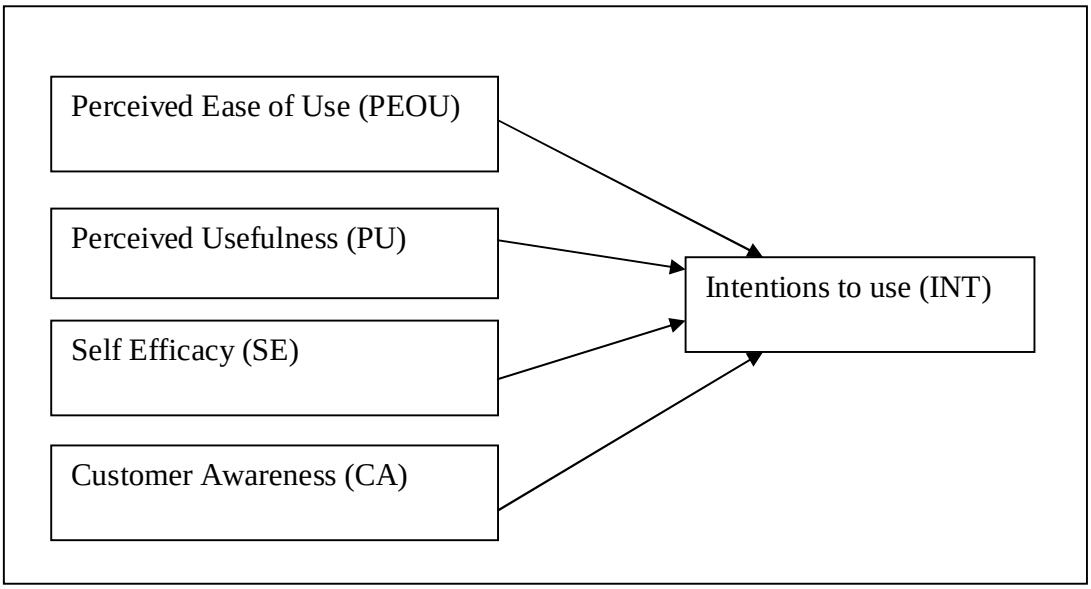
influencing intentions to use, namely Perceived Ease of Use, Perceived Usefulness, Self Efficacy and Customer Awareness.



Hypothesis

According to the model, the study has four hypotheses:

H1: Perceived Ease of Use (PEOU) has no significant influence on Intentions to use (INT)

H2: Perceived Usefulness (PU) has no significant influence on Intentions to use (INT)

H3: Self Efficacy (SE) has no significant influence on Intentions to use (INT)

H4: (CA) has no significant influence on Intentions to use (INT)

Methodology

Sampling and data collection

Convenient sampling was done where respondents were personally contacted at bank branches and few respondents were contacted through references. Public and private banks both were visited for the same. Target population was Internet banking users in Valsad. A total of 305 responses were collected.

Survey tool

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The study was carried out using a structured questionnaire where first part included personal and demographic information. Demographic information included gender, age, education, occupation, income and marital status. The second part included statements regarding Perceived Ease of Use (PEOU), Perceived Usefulness (PU), Self Efficacy (SE) and Customer Awareness (CA) and their impact in Intentions to use (INT). They are Likert scale from 1 to 5 from strongly disagree to strongly agree. A total of 33 statements were constructed to study internet banking adoption. Reliability and validity of these statements were checked to confirm its appropriateness.

Data analysis

The data collected through questionnaires were analyzed by descriptive analysis. Frequencies, percentage and graphs are used. Correlation and regression analysis were also collected to understand the impact of various constructs on intentions to use internet banking.

Table 1 shows social demographic profile of respondents. Out of 305 respondents, 202 are male representing 66% used internet banking and 34% were female. The table also indicates that majority of the respondents were in the age group of 31 to 40 years which is 51% followed by age group of 18-30 years (28%). 213 respondents representing 70% were married. Respondents who used internet banking were majority job holders (49%) followed by self employed (28%). 49% respondents were post graduate and 41% were graduates totaling to 90%. This indicates that people with higher study qualifications used internet banking services. Majority of respondents fall under the income slab of Rs. 5-8 lacs representing 58%.

Table 1 Demographic details

Demography	Sub category	Frequency	Percentage
Gender	Male	202	66
	Female	103	34
Age	18-30	84	28
	31-40	155	51
	41-50	34	11
	Above 51	32	10
Marital Status	Married	213	70
	Unmarried	92	30
Occupation	Self employed	84	28
	Professional	33	10
	Job	150	49

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	Student	11	4
	Housewife	15	5
	Retired	12	4
Education	Post graduate	151	49
	Graduate	124	41
	Diploma	27	9
	Others	3	1
Income	Upto 5 lacs	176	58
	5 lacs to 8 lacs	61	20
	8lacs to 10 lacs	48	15
	10 lacs and above	20	7

Reliability

To assess the internal consistency of the model, reliability test was run. The Cronbach reliability coefficients should be more than the minimum cutoff score of 0.7. Table 2 shows the value of Cronbach's Alpha as 0.856 which is very high and thus indicating there is adequate internal consistency.

Table 2 Reliability Statistics

Cronbach's Alpha	N of Items
.856	33

Discriminant validity

Discriminant validity examines correlation among the constructs and among observed indicators. As a general rule, a 0.85 correlation or larger indicate poor discriminant validity. In the Correlation table, all the values are less than 0.85 which indicates adequate discriminant validity.

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Table 3 Correlations						
		PEOU	PU	SE	CA	INT
PEOU	Pearson Correlation	1	.508**	.158**	.138*	.379**
PU	Pearson Correlation	.508**	1	.153**	.121*	.393**
SE	Pearson Correlation	.158**	.153**	1	.069	.342**
CA	Pearson Correlation	.138*	.121*	.069	1	.318**
INT	Pearson Correlation	.379**	.393**	.342**	.318**	1
**. Correlation is significant at the 0.01 level (2-tailed).						
*. Correlation is significant at the 0.05 level (2-tailed).						

Descriptive analysis

Table 4 Mean values for statements	
Perceived Ease of Use	**Mean**
Internet Banking services are clear and understandable	4.24
Internet banking is an easy way to conduct banking transactions	4.43
It is easy for me to remember how to perform tasks with Internet banking	4.18
Using Internet banking does not require a lot of mental effort	3.80
Lack of clarity in procedures related to Internet banking worries me	3.30

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Lack of personal relations while using Internet banking worries me	3.62
It is easy to do what I want to do using Internet banking	4.25
Overall, I find the use of the Internet Banking services easy	4.41
Perceived Usefulness	
Using Internet banking facilities allow me to save time	4.71
Internet banking makes it easier for me to conduct my banking transactions	4.59
Internet banking is a convenient way to manage my finances	4.43
Internet Banking is more user-friendly than other existing channels, including Bank Branches, ATMs, and Phone Banking	4.14
Internet Banking gives me access to banking services at any time (24x7)	4.69
Internet banking gives me up to-date information of my account	4.52
Internet Banking saves my travelling costs to bank.	4.48
Overall, I would find using the Internet Banking to be advantageous	4.50
Self Efficacy	
My confidence in internet banking would increase, if…	
I had used similar technologies before this one to do the same task.	3.80
Even if no one is around to show me how to use it.	3.76
Even if I have never used a system like it before	3.62
If I see someone else using it before I try myself	3.97
If someone else would help me get started	3.69
If I had the manuals or online help for reference	3.78
If someone showed how to do it first	3.62
If I could call someone for help if I got stuck	3.35

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I am already skilled at using Internet banking	4.06
Customer Awareness	
I receive enough information about Internet banking services	3.87
I receive enough information about the benefits of Internet banking	3.83
I receive enough information of using Internet banking	3.79
I never received information about Internet banking from the bank	3.62
Intention to Use	
I would use Internet Banking for my banking needs	4.40
Using Internet Banking for handling my banking transactions is something I would do	4.32
I intend to use Internet banking in the future	4.48
I will strongly recommend others to use Internet banking	4.50

Table 4 shows mean values of statements asked for variables PEOU, PU, SE, CA and INT. Most of the mean values of PEOU and PU have scores between 4 to 5 which means that respondents react favorably towards it. This indicates that internet banking is perceived as easy to use and beneficial to them. Comparatively, mean score for self efficacy and customer awareness is approximately between 3.5 to 4 which are higher than average (3) but lower than PEOU and PU. Mean score of Intention to use is approximately 4.5 which are higher indicating that respondents have favorable intentions to use internet banking.

Regression Analysis

This table provides the R and R2 values. The R value represents the simple correlation and is 0.573 (the "R" Column). The "R Square" column indicates how much of the total variation in the dependent variable, can be explained by the independent variable. In this case, 32.8 % variation in Intention to use is explained by PU, PEOU, SE and CA.

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Table 5 Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.573[a]	.328	.319	.45484
a. Predictors: (Constant), CA, SE, PU, PEOU				

ANOVA table is used to check how well the model fits the data. The table shows significance value is 0.000 which is less than 0.05 indicates that, overall, the regression model statistically significantly predicts the outcome variable (i.e., it is a good fit for the data).

Table 6 ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	30.351	4	7.588	36.677	.000[a]
	Residual	62.064	300	.207		
	Total	92.415	304			
a. Predictors: (Constant), CA, SE, PU, PEOU						
b. Dependent Variable: INT						

Coefficient table shows the relative importance of the variables by unstandardized coefficient beta values. From the Coefficients table we can make a linear regression line

$Y=\alpha+\beta 1x1+\beta 2x2+\beta 3x3+\beta 4x4$

Intention = 1.264 + 0.174 (PEOU) + 0.223 (PU) + 0.252 (SE) + 0.136 (CA)

All the beta values are positive indicating that all factors are positively affecting the Intention to use variable. Self efficacy (SE) has the highest beta value of 0.252 indicating that amongst four variables it is most significant. (PU) has the second highest beta value (0.223) followed by (PEOU) which is having beta value 0.174 followed by Customer awareness (CA) with beta value 0.136.

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Table 7 Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.264	.269		4.701	.000
	PEOU	.174	.051	.188	3.398	.001
	PU	.223	.054	.228	4.132	.000
	SE	.252	.047	.261	5.415	.000
	CA	.136	.026	.246	5.134	.000
a. Dependent Variable: INT						

According to the p value, all hypotheses are having p values less than 0.05 and thus they are rejected. In other words, all factors considered in this study significantly influence intention to use. Thus, Self efficacy, Perceived usefulness, Perceived Ease of Use and Customer awareness have significant influence on intention to use internet banking.

Conclusion

This study aims to find whether perceived usefulness, perceived ease of use, self efficacy and customer awareness had influence on intention to use internet banking. Regression analysis showed that Self efficacy has significant influence on intentions. Respondents feel that if they get help from others they will have more confidence in using internet banking. Mean score of Self efficacy statements is above average and thus respondents favorably think of getting help from various sources to transact on internet banking.Even if a customer is habitual to use internet banking still he will not deny extra help. Similarly Perceived ease of use had positive influence on intentions to use and its mean score was also high. Thus respondents perceive it easy and thus encourages customers to adopt internet banking.

The mean scores suggest that customers view usefulness of internet banking favorably. Moreover PU had positive significant influence on intentions. This indicates that respondents feel that using internet banking will enhance their performance and positively adopts it. Banks

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should strive to create more awareness regarding the benefits to customers. Customer awareness had the least beta value but had positive influence on intention to use internet banking. The mean scores also suggest that creating awareness for internet banking and its benefits will help in encouraging customers to adopt internet banking.

Limitations and Future Studies

The study has used a sample size of 305 respondents and consisted of respondents who were highly educated and thus conclusions cannot be generalized over entire population. Different demographic factors resultsin different findings and future studies may focus on comparing different demography. The value of R square is low. Thus, there can be more constructs explaining adoption of internet banking but the study uses limited number of constructs. Future studies can incorporate more constructs into the study relevant to internet banking like Security, trust, privacy and effect of other people, who are important to user etc., to adopt or not to adopt new technology.

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