

IMPACT OF BEHAVIOURAL FACTORS ON ADOPTION OF E- BANKING

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Abstract: The internet and World Wide Web (WWW) offer banker's and customer's an opportunity with innovative new virtual environment that can hopefully stimulate and enhance their learning and operative process. The usage of information technology in banking transactions in general and financial transactions in particular not be an easy task for the customer's. Customer's use of electronic banking require acceptance of the technology, which can be difficult and complicated and demands efforts of the customer because of changing in behavioural patterns. The Prospect of using technology on one hand, can simplify customer's understanding of exchange, but on the other hand, it can make customer's understanding more difficult. Thus, the purpose of this paper is to measure the impact of behavioral factors viz. perceived ease of use and perceived usefulness on behavioral intention to adopt internet banking and customer satisfaction. The data for the present study has been obtained from 410 online banking customer's randomly selected from Jammu city. Both exploratory and confirmatory factor analysis has been used for analysis of data. The findings revealed that both perceived ease of use and perceived usefulness have positive impact on behavioral intention to use online banking as it saves their time, cost and enhances their effectiveness in work. The study has confined only to the perceptions of online customers and other variables such as perceived benefits and perceived credibility are not taken into consideration and thus need to be applied in future research.

Keywords: Internet Banking, Behavioral Intention, Customer Satisfaction.

1.0 Introduction

Now a days, Technology is affecting the life of every individual both qualitatively and quantitatively. The quick expansion of information technology has imbibed into the lives of millions of people and have introduced major changes in the worldwide economic and business atmosphere. Technological developments in the banking sector have speeded up communication and transactions for clients (Booz et.al, 1997). E-banking or Online banking is the newest delivery channel for banking services and is gradually prevalent in our economy ascribed to factors such as reduced cost associated with physically serving the customer, shorten processing periods, increased speed, stretchability of business transactions and overall better service quality. E-banking is the newest delivery channel for banking services. It is a wider term refers to several types of services through which bank customers can gather information and do most of the retail banking at their computers, television or mobile phones (Daniel, 1999; Mols, 1998; Sathye, 1999). The internet and world wide web (WWW) offers bankers and customers an opportunity with innovative new virtual environments that can hopefully stimulate and enhance their learning process. The customers intention to adopt a new technology is primarily determined by the ease of use of the technology (Davis,1989, Davis et.al,1989). Perceived ease of use has been an important factor in studies of information technology acceptance and internet and world wide web adoption being no exception. It refers to the degree to which a person believes that using a particular system would be free of effort. This follows from the definition of 'ease' which means freedom from difficulty or great effort (Radner and Rothschild,1975). It can also be defined as the degree to which an innovation is perceived not to be difficult to understand, learn or operate (Rogers, 1962). Similarly, there are several factors that predetermines the consumers attitude towards internet banking such as persons demography motivation and behaviour towards different banking technologies and individual acceptance of new technology (Safeena et al, 2011). Customer's attitudes towards internet banking are influenced by the prior experience of computer and new technology (Laforet and Li, 2005) and other environmental factors (Davis, 1989; Doll and Torkzad, 1991). The adoption of E- banking as a new channel for banking transactions forces customers to consider concerns about password integrity, privacy, data encryption, hacking and the protection of personal information (Benmati and Serva, 2007) and thus considers perceived usefulness, security and privacy are the main influencing factors to accept internet banking system to conduct banking transactions (Qureshi et al, 2008). Perceived usefulness is one of the important component of Technology Acceptance Model (TAM) and has been widely used by information system researchers (Davis, 1989). It is defined as the extent to which a person believes that using a particular system will enhance his or her job performance (Alsajjan and Dennis, 2009). Usefulness refers to user's assessment of the likelihood that the information will enhance their decision. It is the subjective probability that

the use of internet in doing banking transactions would improve the way a user could complete a given task (Guriting and Ndubisi, 2006; Jaruwachirathanakul and Fink, 2005; Erikson et al, 2005; Laforet and Li, 2005; Polatoglue and Ekin, 2001; Lio and Cheung, 2002).

2.0 Review of Literature

Some of the studies on intention to use online banking and factors affecting their usage has been reviewed as under:-

Ashtiani and Iranmanesh (2012) identified factors affecting adoption of internet banking in Arak on the basis of data collected from 363 M.S, students of Islamic Azad University of Arak and found positive word of mouth and trust in bank having a direct effect while perceived competence having indirect effect on internet banking adoption. **Muhammad and Rana (2012)** found perceived ease of use, perceived usefulness, compatibility, innovativeness and perceived credibility influencing customer's intention to adopt internet banking in Saudi Arabia. **Wu, Chang and Lin (2012)** found trust, perceived usefulness, perceived ease of use and relative advantage having a significant effect on customer's behavioural intention to adopt internet banking. **Eze et al (2011)** investigated the factors that influence the use of internet banking services among young Malaysian adults and found six factors i.e. perceived ease of use, perceived usefulness, relative advantage, self efficacy, perceived credibility and trialability as the main factors influencing consumer attitude to adopt online banking channel. **Yaghoubi and Bahmani (2010)** investigate the factors affecting the adoption of online banking in Isfahan province of Iran and found intention to use online banking positively affected mainly by perceived behavioural control and perceived usefulness. **Aderonke and Charles (2010)** focus on determining the level of users acceptance of the electronic banking services on the basis of various dimensions such as perceived credibility (PC), computer self efficacy (CSE), perceived usefulness (PU) and perceived ease of use (PEOU) and found all these factors influencing users attitude towards the acceptance of e-banking. **Chang and Hamid (2010)** also explored two factors viz. perceived ease of use and perceived usefulness influencing behavioural intention of customers to adopt internet banking in Taiwan. **Kashier et al (2009)** also investigate factors affecting continued usage of internet banking among Egyptian customers and found only one variable i.e perceived ease of use which is the strongest predictor of intention to continued usage of internet banking services. **Tulani et al (2009)** examined the extent of adoption and usage of internet banking by commercial banks in Zimbabwe and studied the challenges they face in the adoption of this technology and observed people using internet banking for checking account balances, payment of bills and fund transfer. They also found perceived benefits of using internet banking as cost reduction, increased loyalty and attracting new customers and the challenges for adoption of internet banking as compatibility with legacy systems followed by cost of implementation and security controls. Likewise **Azouzi (2009)** also examined the adoption of electronic banking in Tunisia and found majority of respondents (95%) having an access to internet but only few of them using it as a primary banking channel. **Qureshi et al (2008)** evaluate the factors that manipulate the nature of customers towards online banking and results show that almost 50% of the clients shifted from traditional banking to online banking system because of perceived usefulness, security and privacy provided by online banks. Similarly **Padachi et al (2008)** examine the factors that affect the adoption of e-banking in Mauritius and revealed ease of use as most significant factor followed by reluctant to change, trust and relationship in banker, cost of computers, internet accessibility, convenience of use and security concerns.

The aforesaid review of literature reveals that so far impact of behavioural factors on adoption of E-banking has not been studied extensively in Indian context. The most of the studies focused on extent of adoption of internet banking (Tulani et al, 2009; Azouzi, 2009; Aderonke and Charles, 2010), Some have studied factors affecting continued usage of internet banking (Kashier et al, 2009; Qureshi et al, 2008; Padachi et al, 2008). The proposed study fills this research gap by studying the impact of behavioural factors on adoption of e-banking in Indian context.

3.0 Hypotheses

HO1: Perceived ease of use will have a positive effect on behavioural intention to use online banking.

HO2: Perceived usefulness will have a positive effect on behavioural intention to use online banking.

HO3: Perceived ease of use will have a positive effect on customer satisfaction.

HO4: Perceived usefulness will have a positive effect on customer satisfaction.

3.0 Research Methodology

The data for the present study have been obtained from both secondary and primary sources. The secondary data available in the various journals such as Journal of Internet Banking and Commerce, Journal of Banking and Finance, Journal of Marketing, E-service journal, and different books have been used at appropriate stages of the

study. The primary data were collected through a questionnaire, in order to measure the impact empirically and test

the relationships between variables, from 410 online banking customers personally contacted from Channi Himmatt colony of Jammu city selected through systematic sampling. The first respondent was selected randomly, then every eight house is contacted for gathering the requisite data. Further, the schedule consisted of 10 items of general information, 10 items relating to perceived ease of use, 11 items relating to perceived usefulness, 6 items relating to behavioural intention and 20 items relating to customer satisfaction. These items were developed after reviewing the relevant literature (Zeng et al., 2009; Cheng et al., 2006; Khurana, 2009; Iman et al., 2006 etc). The data were analysed by using Statistical Package for Social Sciences (SPSS, version 17) and AMOS, version 16.

4.0 Scale Purification

As already stated the multivariate data reduction technique for factor analysis has been used with the help of 17.0 version of SPSS, which is most appropriate in studying interrelationships among variables that too with a new set of variables fewer in number than the original ones (Stewart, 1981). The study used principal component analysis with a varimax rotation with the basic purpose of data reduction, i.e obtaining scores on a large set of measured variables and reducing them to scores on a smaller set of composite variables and thus retaining maximum information from original variables (Fabrigar et al., 1995). For describing the underlying factor structure, eigen value equal to or more than one has been used to determine the number of components to be extracted for further analysis. Further, the test of appropriateness of factor analysis has been verified through KMO measure of sampling adequacy, where value greater than 0.50 is acceptable, between 0.50 to 0.70 is mediocre and 0.70 to 0.80 is good, 0.80 to 0.90 is great and above 0.90 is superb (Malhotra, 2007), which indicates its relevance for further analysis. EFA was carried out dimension wise to restrict the number of indicators. During EFA, six items of both perceived ease of use and perceived usefulness have been eliminated and remaining items were grouped into three factors viz. perceived ease of use, perceived usefulness and interactivity. The four items of behavioural intention have also been eliminated and remaining items resulted into one factor as behavioural intention. Further, fourteen items of customer satisfaction got eliminated and remaining six items got converged into two factors as customer oriented services and after sales services (Table:1).

5.0 Analysis

5.1 Reliability and Validity

To check the internal consistency and reliability of the data collected the Cronbach's alpha value has been analysed wherein according to Nunnally (1978) the value above 0.70 is generally considered as acceptable criterion for demonstrating internal consistency.

5.2 Reliability analysis was conducted before CFA in order to establish internal consistency of the items in the data. This led to the extraction of four important indicator for perceived ease of use construct, three for perceived usefulness construct, two for interactivity and two for behavioural intention construct and six for customer satisfaction.

5.3 Construct validity is the extent to which a set of measured items actually reflect the theoretical latent construct designed to measure the impact under reference. Thus, it deals with the accuracy of measurement. Basically, it is made up of the following three important components:

5.4 Convergent Validity: The items that are the indicators of a specific construct should converge or share a high proportion of variance in common, which is known as convergent validity. The relative amount of convergent validity among items measured is studied through factor loadings and variance extracted.

5.5 Factor Loadings: Factor loadings above 0.50 or ideally 0.7 or higher are considered significant and these indicate higher level of convergence.

5.6 Variance Extracted: In CFA, the average percentage of variance extracted (VE) among a set of construct items is a summary indicators of convergence. VE is computed as the total of all squared standardised factor loadings divided by number of items. VE should be 0.50 or greater to suggest adequate convergent validity.

5.7 Composite Reliability: It is also an indicator of overall validity. The rule of thumb for reliability estimate is 0.70 or higher and reliability in the present case is established as it is above 0.70 in all the cases. High construct reliability indicates internal consistency, meaning thereby that all measures consistently represent the same latent construct.

$CR = (\text{Sum of standardized loadings})^2 /$

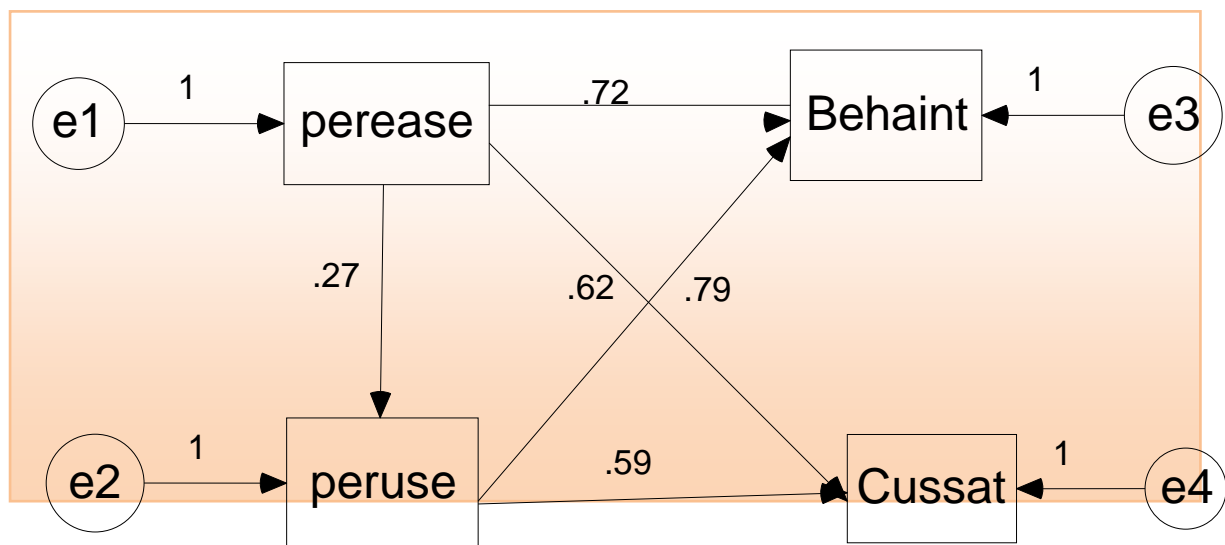
$(\text{Sum of standardized loadings})^2 + \text{Sum of error variance terms}$

5.8 Discriminant Validity: It is the extent to which a construct is truly distinct from other constructs. High discriminant validity provides evidence that a construct is unique and captures some phenomena, which other

measures do not. Discriminant validity was assessed with the variance extracted test recommended by Fornell and Larcker (1981), where variance extracted should be greater than the squared correlation between the constructs and this condition has been fully satisfied by all the constructs (Table:4).

6.0 Confirmatory Factor Analysis CFA has been used to provide a confirmatory test to the measurement theory as a method of testing how well measured variables represent a smaller number of constructs. In the present study, CFA was performed to assess fitness, reliability and validity of measurement models for different constructs of e- banking. In CFA, no distinction is made between exogenous and endogenous constructs; hence it is an interdependence technique like exploratory factor analysis (EFA). CFA distinguishes from EFA, as in EFA all measured variables are related to every factor by a factor loading estimates, whereas in CFA researcher has to assign variables to each factor on the basis of preconceived theory. The construct perceived usefulness consisted of two factors viz. perceived usefulness and interactivity consisting of three and two items respectively. The model showed strong fit as all the fitness measures were found to be acceptable with chi-square/df=3.194, GFI= 0.990, AGFI= 0.952, CFI= 0.988, TLI= 0.959, RMR= 0.011 and RMSEA= 0.074. Further, the model has been found to be valid as revealed through AVE (0.538) and construct reliability (0.925). The construct perceived ease of use consisted of four items which were reduced to two due to low regression weights (<.05). The model fitness is not assessed due to less number of items retained after CFA, but the validity could be assessed through AVE (.614) and construct reliability (.867). The customer satisfaction construct originally consisted of twenty items, which were reduced to six items after EFA under two factors with four for customer oriented services and two for after sales services. Two of the items of customer oriented services have got deleted due to low regression weights (<.05), finally resulted in four statements two for each factor for final analysis. The model has been found to have a good fit (Chi-square/df=2.766, RMR= 0.020, GFI= 0.993, AGFI= 0.966, TLI= 0.955, CFI= 0.985 and RMSEA= 0.067). Further the model has been proved to be valid as indicated through AVE which came to be 0.51, higher values of standardised regression weights of each indicators, higher construct reliability (0.79) (Table:3), which was assessed from the construct loadings and error variance.

6.1 Structural Equation Modelling and Hypothesis Testing: Structural equation modelling (SEM) is a statistical technique for testing and estimating causal relations represent relationship between latent constructs. It was used to test the relationship between perceived ease of use and perceived usefulness with behavioural intention and customer satisfaction. The results reveals significant SRW values between perceived ease of use and behavioural intention (SRW=.728, P=.000) and also between perceived usefulness and behavioural intention (SRW=.633, P=.001). Based on the result, the first and second hypotheses were accepted. Further relationship between perceived ease of use and customer satisfaction also came to be significant (SRW=.793, P=.000), indicating the process of conducting e-banking easy to use thus leading to higher customer satisfaction. This finding is in line with the findings of Jalal et al.,(2011) where they proved that perceived ease of use is the source of satisfaction in context of E-banking. Similarly, relationship between perceived usefulness and customer satisfaction also came to be significant(SRW=.595, P=.001), indicating that if the system or technology contributes to one’s development, it will definitely leads to higher satisfaction. Per se, acceptance of third and fourth hypothesis. The relation resulted in model fit as CMI N/df= 2.831, RMR=.005, GFI=0.999, AGFI=0.993, TLI= 0.983, CFI=0.957 and RMSEA=0.072.



6.2 Concluding Observation

In any ‘business to customer’(B2C) type of environment, satisfying a customer is the ultimate goal of business. It is an important theoretical as well as practical issue, as many of them subscribe to the fact that higher customer satisfaction will lead to greater customer loyalty. The findings of the study reveal that perceived ease of use and perceived usefulness are not only antecedents of behavioural intention but also the source of generating customer satisfaction. Also, perceived ease of use is better predictor of intention as compared to perceived usefulness which may be attributed due to combination of convenience provided by those with easy internet access, the availability of secure, high standard electronic banking functionality as well as clearly categorized guidelines for conducting transactions online.

7.0 Limitations and Future Research

Firstly, socio-demographic variables have not been taken into consideration. Secondly, data have been collected only from internet banking users. Thirdly, data have been collected from one posh colony of Jammu city i.e, Channi Himmat (though quite large having about 3218 households representing invariably all sections of the society), thus limiting the generalizability of results. Another limitation was that the study confined to only perceived ease of use and perceived usefulness, thus other factors such as perceived benefits, perceived credibility and loyalty as a whole should be considered for future studies.

Table 1 : Factorial Profile of Data from Bank Customers

Variables	Mean	Standard Deviation	Factor Loadings	Communalities	% of Variance Explained	Eigen Values	Cronbach Alpha
Factor 1: Customer Oriented Services					7.197	7.819	.487
Pleased with bank for providing online services	3.92	.838	.746	.784			
Website provides innovative deposit schemes	4.05	1.00	.676	.710			
Website allows easy transfer of money	4.22	.982	.785	.724			
Website provides customer oriented services	4.00	1.16	.762	.721			
Factor 2: After Sales Services					5.844	4.906	.674
Experience with online banking is good	4.07	.772	.643	.785			
Satisfied with after sales services	3.97	.825	.655	.750			
Factor 3: Perceived Usefulness					4.993	3.709	.695
Online banking effectiveness in banking transactions	4.31	.653	.556	.761			
Find doing online banking useful	4.37	.681	.688	.693			
Useful for utilisation of banking services	4.43	.549	.705	.676			
Factor 4: Interactivity					4.844	3.057	.740
Enhances effectiveness in information seeking	4.28	.778	.779	.819			

Site does not make lose time interactivity	4.21	.762	.754	.707			
Factor 5: Perceived Ease of Use					4.762	2.862	.334
Simple to do banking	4.09	.984	.729	.853			
Website looks professionally designed	4.17	1.05	.712	.678			
User menus are clearly categorised and laid out in the screen	4.32	.627	.757	.775			
Demonstrations or guidelines helps in doing banking	4.06	.949	.729	.716			
Factor 6: Behavioural Intentions					3.99	2.761	.383
Use online banking for banking needs	4.36	.763	.728	.718			
Strongly recommend others	3.20	1.49	.600	.714			

Table 2: Results of various CFA Fit Indices

Constructs	CMIN/DF	GFI	AGFI	RMR	RMSEA	CFI	TLI
Perceived Usefulness	3.194	0.990	0.952	0.011	0.074	0.988	0.959
Customer Satisfaction	2.766	0.993	0.966	0.020	0.067	0.985	0.955

Table 3: Reliability and Validity of Latent Constructs

Constructs	Convergent Validity/AVE	Construct Reliability
Perceived Usefulness	0.54	0.93
Perceived Ease of Use	0.62	0.87
Customer Satisfaction	0.51	0.80

Table 4 : Discriminant Validity of Latent Constructs

	PEOU	PU	BI	CS
PEOU	.614			
PU	.288** (.082)	.538		
BI	.070 (.0049)	.05 (.0025)	.41	
CS	.635** (.403)	.267** (.071)	.019 (.00037)	.50

Diagonal axis show average variance extracted. Values within parenthesis are squared correlation between the dimensions and values without parenthesis are actual correlation values, **sig. at 0.01 level, * sig. at 0.05 level

8.0 References

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