Macrothink Institute™

International Journal of Accounting and Financial Reporting
ISSN 2162-3082
2014, Vol. 4, No. 2

Factors contributing towards adoption of E-banking in Pakistan

Azam Khurshid

MS Scholar, Department of Management Sciences

The Islamia University of Bahawalpur, Pakistan

Muhammad Rizwan (Corresponding author)

Lecturer, Department of Management Sciences,

The Islamia University of Bahawalpur, Pakistan

Email: rizwan.arshad@iub.edu.pk

Erum Tasneem

MS Scholar, Department of Management Sciences

The Islamia University of Bahawalpur, Pakistan

Accepted: November 08, 2014

Doi:10.5296/ ijafr.v4i2.6584 URL: http://dx.doi.org/10.5296/ ijafr.v4i2.6584

Abstract

Purpose: The main purpose of this research is to understand the customer's E-Banking adoption behavior. To achieve this purpose we are going to investigate the External variables (Perceived Risk, Service Quality, and Perceived Trust), Technology Acceptance Model (perceived usefulness, perceived ease of use) and their effect on attitude towards using and the adoption of E-Banking.

Methodology: Questionnaire was used to collect the data from convenience sampling of 150 customers. Regression analysis is use to determine the stability of E-Banking proposed model and hypothesis testing.

Results & Findings: The results confirm that Perceived Usefulness, Perceived Ease of Use have positive impact on Attitude towards using. Service Quality has positive impact on Perceived Usefulness, Perceived Ease of Use, and Attitude towards using. Perceived Risk has

negative impact on Attitude towards using. Perceived Trust and Attitude towards using have positive impact on E-Banking adoption. The results not supported one hypothesis Perceived Risk (PR) impact on Perceived Usefulness (PU). Results shows that PR has negative impact on PU.

Keywords: Technology Acceptance Model, Service Quality, E-Banking, Perceived Trust, Perceived Risk

1. Introduction

The innovation of technology faced many reactions by the people, some people perceive that it makes the task easier and time saving while on the other hand some people perceive it according to the perspective of risk and fear (Dillon and Morris, 1996). Now a day's technology like E-Banking makes the task easier. The day's work an individual can complete within hours due to advent of technology (Guriting & Ndubisi, 2006; Ratnasingam et al., 2005; Srinivasan, 2004). Many institution adopt the technology so that they can easily access to their customers (Gefen et al.; Lu et al.; Winch & Joyce, 2006). Banking sector more focused upon E-Banking because it helps them to get more competitive advantage by providing better service quality (Jayawardhena and Foley, 2000).

E-Banking service was started from developed countries and it was originated with Automated Teller Machine (ATM) since 1980. But in 1990 the banking sector started to perform their banking transaction through telephone. But in 1995 internet banking service was introduced in USA (Sohail and Shanmugham, 2003).

E-Banking is the abbreviation of Electronic Banking, it is define as all the transaction can take place through electric system like web. E-Banking is the way that generate connection between the service provider and the customers. (Daniel, 1999). E-Banking helps all customers to make the transactions, to access their account or to get the information through the internet. Banking sector usually use the approach of E-banking for competition. Due to the introduction of technology many banking sector use this technology for the purpose of information source as well as transaction, as the results E-Banking users can perform many banking transaction like balance inquiry, paying of bill, checks writing transfer of funds from one account to another (Mian and Rizwan, 2013). E-Banking provide facility to their customers and to fulfill customer's expectation about this service. The great risk is involve in this advance technology E-Banking. As there is numbers of hackers who also use this facility and can hack customer's personal information. This thing can reduce people trust and their using behavior of E-Banking.The main purpose is to value the customer's behavior of E-Banking usage. To achieve this purpose we are going to investigate two external variables perceived risk and service quality that effect Technology accepted model (TAM), perceived usefulness, perceived ease-of-use, and TAM are more focused upon the outcomes attitude and their effect on adoption of E-Banking. Lallmahamood (2007). TAM that includes perceived usefulness and perceived ease of use are also called belief (Agarwal &Karahanna, 2000; Straub, Limayem, &Karahanna, 1995).While perceived trust directly influence the adoption of E-Banking (Theodosios and George ,2005).

Perceived usefulness (PU) is define as how much customers believe that this can make transaction more quickly and can generate benefits for them. According to the (Devis) the perceived ease of use (PEOU) is define as the extent of this technology required less mental effort to use. P. Chau, (2001). Peter and Ryan (1976) defined perceived risk (PR) it is customers expected loss that can occur in using E-Banking. As this service are providing great facility to their customers but customers still feel fear in using this technology, they perceive that by adopting this technology they can face financial loss. (Natarajan et al., 2010). While service quality (SQ) is define as how much customers satisfied with the quality level V. Venkatesh, , and F. D. Davis (2000). SQ can also define as the gap between the customers need and their expectation and the real quality of this service (Akinyele and Olorunleke, 2010) Trust is most valuable thing that is needed to generate in customers mind so that they will move more towards E-Banking (Mayer et al., 1995). It is necessary to build the trust in the mind of customers related to E-Banking so that perceived risk will decline and service provider can retain their customers. E-Banking provide benefits both to the bank and customers. Banking sector can attain more competitive advantages, they can increased their market share through which they can get more market position and can enhanced their profits. This service can also save their time and they perform their transaction more quickly without wasting their time. As this technology is very advanced so this thing can generate positive image in the mind of customers. This fast moving technology can satisfy customers need more rapidly (Aladwani, 2001). Customers can also get advantages of this service they can also save their time as when they visit bank branches more their time wasted there. E-Banking save their time and they can access more services that are not available in the bank branches. (Baraghani, 2007). If any their need don't fulfill customers can do complaint and can get fast response without waiting days. Customers don't need to carry large amount of cash in their hand and they can avoid fear of loss money. (Brogdon, 1999).

2. Literature review:

Due to the advent of new technology banking sector is changing very rapidly (Gilaninia& et al, 2011). In this global world E-Banking has become source of fulfilling customers demand everywhere and every time. People can easily and rapidly access to their product or services through E-Banking (Akinyele and Olorunleke, 2010). With the revolutionizing of E-Banking the banking sector can made innovation in their product and service, they can also make decision about investment. They can also decide about which product or service need to deliver their customer (Raihan 2001). So here are the factors that affect the adoption behavior of people specially regarding E-banking.

2.1 Perceived usefulness (PU):

Perceived usefulness is define as the extent to which a customers can believe that the service E-Banking can improve their performance of work (Dillon and Morris, 1996). According to Davis et al., 1989; Jackson et al., 1997; Venkatesh, 1999 who in their research provide the evidence of PU has significant effect in E-Banking adoption. Perceived usefulness is the determinant that effect on users attitude toward E-Banking and their final adoption P. Chau, (2001). PU is basic variable that buildup customers adoption of E-Banking. K. Eriksson, K.

Kerem, and D. Nilsson, (2005). PU is the antecedent of adoption of E-Banking system Y. Wang, Y. Wang, H. Lin, and T. Tang, (2003). So it is generally predicted that people use E-Banking because they find it useful.

H1: Perceived Usefulness (PU) has positive effect on the attitude toward E-banking use.

2.2 Perceived Ease of Use (PEOU):

According to the Davis (1989), Perceived Ease of Use (PEOU) is defined as the perception of users about services that it is easy to use and it does not require any mental effort (Rehman et al., 2013). The users usually want to adopt those technology that is so simple and not complicated in use (Calisir and Gumussoy, 2008). PEOU is the effortless using of E-Banking system and it has positive relation towards the attitude of E-Banking usage G. Rigopoulos and D. Askounis, (2007). Researchers in their earlier research provide the evidence that PEOU has significant effect towards attitude of using E-Banking (e.g., Davis et al., 1989; Jackson et al., 1997; Venkatesh, 1999). PEOU is the antecedent and have positive effect on PU and attitude toward using E-Banking (Straub et al., 1995; Igbaria et al., 1996; Teo et al., 1999; Venkatesh and Davis, 2000; Teo, 2001; Gefen et al., 2003). So from researchers arguments it is prove that Perceived Ease of use has significant effect on perceived usefulness and their attitude towards E-Banking.

H2: Perceived Ease of use has positive effect on the attitude toward using E-banking.

H3: Perceived Ease of use has positive effect on Perceived Usefulness.

2.3 Service quality (SQ):

According to Pitt, L.F., Watson, R.T., &Kavan, C.B., (1995), Service quality (SQ) play an important role to determine the satisfaction level of the users so, the customers satisfaction level can b enhanced by providing service quality. Dilijonas et al., (2009) , said that by providing service quality at reasonable cost more demand of customers can be fulfill more they will move towards E-Banking. According to V. Venkatesh and F. D. Davis (2000), Service Quality is providing quality by banking sector and determine the satisfaction level of the customers. So more will be the customers satisfied with the banking qualitative service more will be they adopt E-Banking service. Khan (2010), said that service quality is an external variable and they effect the ease of use of E-Banking. Al-Hawari et al. (2006), said that the service quality (SQ) depend upon the usefulness of the system.

H4: Service quality (SQ) has a positive effect on customer's attitude towards use of E-Banking.

H5: Service quality (SQ) has a positive effect on Perceived Ease of use of E-Banking.

H6: Service quality (SQ) has a positive effect on Perceived Usefulness of E-Banking.

2.4 Perceived Risk (PR):

Perceived Risk is introduced by Bauer (1960), and he explained that it is uncertainty that comes in the mind of customers while making decision about E-Banking adoption. According

to (Natarajan et al., 2010), Perceived Risk (PR) is basically the user's fear of occurring any kind of loss. Perceived Risk is the uncertainty that users perceived which can affect their attitude of using the E-Banking (Chan et al., 2004). AL. Zhao, NK. Lewis, SH. Lloyd, and P. Ward, (2010), PR is the belief of users that negative outcomes can occur by using technology so this thing caused negative influence on perceived usefulness (PU) and their attitude toward using. S. Al-Somali, R. Gholami, and B. Clegg (2009), PR is the perception of the users about security system that there is the Risk of losing their private information. Perceived risk is a customer's expected loss that caused negative consequences (Peter and Ryan, 1976), (Feather man and Pavlou, 2003). Perceived Risk consist of six components Jacoby and Kaplan (1972):

- ✓ Financial risk
- ✓ Performance risk
- ✓ Social risk
- ✓ Physical risk
- ✓ Psychological risk

So high the perceived risk less will be adoption and vice versa. Perceived risk also directly influence the perceived usefulness (PU) and attitude toward the Adoption of E-banking.

H7: Perceived Risk negatively influence the attitude toward E-Banking Adoption.

H8: Perceived Risk negatively influence the perceived usefulness.

2.5 Perceived trust (PT):

Theodosios and George (2005), stated that Perceived Trust is an important factor to analyze customer's behavior of E-Banking adoption. The customers Perceived Trust effect when they make transaction with electronic system (McKnight, Choudhury, &Kacmar, 2002a,b). As the switching cost is low for E-Banking users so there is a need to develop Perceived Trust in customers, due to which Perceived Risk can decline and banking sector can retain their more sectors. Current researchers not more focused upon this important factor Perceived Trust (Kim, Shin, & Lee, 2009; Lin, 2011; Luo, Li, Zhang, & Shim, 2010). Perceived Trust (PT) is the factor that build positive expectation about the adoption of E-Banking in customer's thoughts (Mayer, Davis, &Schoorman, 1995). PT includes three factors ability, integrity and benevolence (Zahedi& Song, 2008). Ability is the term that define as the service provider has such ability to fulfill their customers need. Integrity refer to the term as the service provider fulfill users' expectation and don't create any negative image. While Benevolence is define as the service provider more customized their service as compared to their self-interest. So it is necessary to buildup users Trust because high Perceive Risk and low switching cost can force customers to move towards another services. Suh and Han, (2002), Perceived Trust positively effect on E-Banking adoption.

H9: Perceived Trust (PT) has a Positive impact in the adoption of E-Banking.

2.6 Attitude toward use (ATU).

The term Attitude refers that the estimation of human behaviors (Ajzen, 1988). Attitude toward using define as users feeling about E-Banking adoption F. Davis, (1993). ATU has a relationship with E-Banking adoption *(Al Somali et al., 2008)*. According to Curran and Meuter (2005), half of the discrepancy of attitude is towards final adoption of technology. Lee (2009), stated that factor Attitude towards use effect on E-Banking adoption. Attitude towards use acts as a mediator between independent factors like PU and PEOU and E banking adoption. If the Attitude of people is positive there will be more adoption and if attitude is negative adoption will be less.

H10: Attitude mediates the relation between antecedents' factors and e-banking Use.

3. Hypothesis and Model:

H1: Perceived Usefulness has positive effect on the attitude toward E-banking use.

H2: Perceived Ease of use has positive effect on the attitude toward using E-banking.

H3: Perceived Ease of Use has positive effect on PU

H4: Service quality (SQ) has a positive effect on customers' attitude toward using E-Banking.

H5: Service quality has significant positive effect on Per EOU

H6: Service quality has significant positive effect on Per UF.

H7: Perceived Risk negatively influence on the attitude toward E-Banking Adoption.

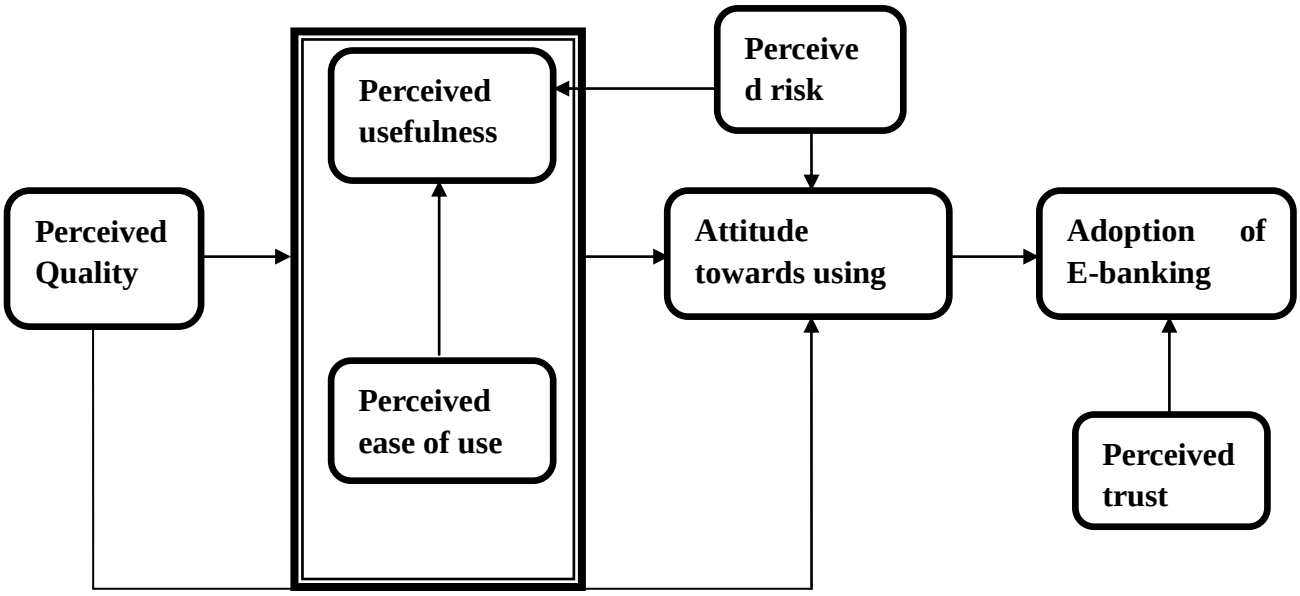
H8: Perceived Risk negatively influence the perceived UF.

H9: Perceived Trust (PT) has a positive impact in the adoption of E-Banking.

H10: Attitude mediates the relation between antecedents' factors and Adoption of e-banking

.

Fig 1: Proposed Model of E-Banking



4. Methodology

In this chapter our aim is to present the research methods that are used in this research paper, further we will also discuss the research approach that is being used and sampling techniques as well as sample size. Methodology simply is a way that researcher follow while conducting their research. Research methodology is completely dependent upon the nature of research as each research has it distinctive characters and uniqueness (Alhamdani et. al. 2006).

The nature of our current research is descriptive. In descriptive nature of research problem is defined to researcher but he has not proper understanding of the situation. So in such cases researcher seeks to describe as well as explain the problem (Dane, 1990). Descriptive research gathers information regarding current status while avoiding the interpretations or judgments (Jackson, 1994).

4.1 Sampling and data collection:

It is very important to define population before we go to sampling. Population is aggregation of individuals, or any other things or phenomenon upon which researcher is going to generalize his or her results. While sample is the subset of the same population(Alhamdani et. al. 2006). For the purpose of data collection 200 self-administered questionnaires were distributed and 150 questionnaires were selected and analyzed.This research applied non-probability sampling technique. None probability sampling allows to collect data more conveniently from pertinent sample or area of interest (Zikmund, 1997). As the number of e-banking user in Pakistan is extremely small so our target cluster was those people who were using internet for their banking activities e.g. software developers and other professionals.

Questionnaire was divided into three parts, first part aimed to get personal and demographic information of respondents' i.e. age, qualifications, income and status of respondents. Second

part was designed to check the extent to which respondent is aware of technology. Third part includes the closed questions to measure the understanding of respondentsregarding the variables determined in research model each factor or variable was measured on five point Likert scale. The scales used in current study were selected from previous researches in the field of E-banking. The source of statement of questionnaires are presented in the following table.

Variables influencing E-Banking	Source
Perceived ease of use	Baraghani (2007), Huang et. al. (2007), Cheng et. al. (2006),
Perceived usefulness	Baraghani (2007), Lee (2009), Huang et. al. (2007),
Perceived risk	Baraghani (2007), Lee (2009), Huang et. al. (2007),
Perceived trust	Matzler it al, (2008). Chanduhuri and Holbrook,(2001)
Attitude	Baraghani (2007), Alireza et. al. (2010), Cheng et. al. (2006),
Perceived service quality	Yoo et al (2000)
Adoption of E-Banking	Moon and Kim (2001)

4.2 Reliability and Validity:

For an effective research it is necessarily that research questionnaire must be consistent and understandable. In our current research scales used were selected from previous studies so our questionnaire was valid and reliable. Reliability ensures us the internal consistency that our instrument measure the same thing every time under same conditions (Polit and Hunger,1985). Following table will represent the reliability statistics of questionnaire items. Cronbach's alpha values for all items are above 0.5 which is minimum recommended value for acceptance by Nunnally (1970)

Reliability analysis

FACTOR	No of items	Cronbach's Alpha
Perceived ease of use	4	0.720
Perceived usefulness	4	0.808
Perceived risk	6	0.839
Perceived trust	4	0.875
Attitude	5	0.772
Perceived service quality	3	0.730
Adoption of E-Banking	3	0.801

5. Hypothesis Testing

5.1 Respondent's Profile:

Following table summarizes the demographic and personal characteristics of the respondents

Variable	Category	Frequency	Percentage
Gender	Male	73	48.9
	Female	77	51.3
Age (years)	Below 20	4	2.6
	20-30	87	58
	30-40	35	35
	40-50	15	10
	Above 50	9	6
Income of respondent	Nil	20	13.33

	Less than 15,000	32	21.33
	15,000 to 30,000	55	36.66
	30,000 to 60,000	30	20.00
	Above 60,000	13	8.66
Education	High School	13	8.66
	Bachelor	38	25.33
	Masters	89	59.33
	M.Phil./ PhD	10	6.66
Status	Student	30	20
	Government employee	62	41.33
	Business man	15	10
	Private job	36	24
	Un-employed	7	4.66

5.2 Hypothesis Results:

Relationship between variables were measured through regression analysis. Data was analyses using SPSS 17.0.Results of all hypothesis along with their status are summarized in table 4.

5.2.1 Perceived Trust (PT) Attitude (ATT) and Adoption of E-Banking.

Regression results of this study depict that perceived trust PT is directly related with Adoption of E-Banking with ($\beta = 0.440$) and ($p < 0.05$). So current study results confirm the research hypothesis H9. We can conclude that more the people trust on some technology more they are prone to adopt it. Regression analysis shows that attitude is strongly related with the adoption of E-Banking with ($\beta = 0.475$) and ($p < 0.01$) so our hypothesis H10 is accepted

5.2.2 Per. UF, Per. EOU and Attitude toward E-Banking.

Our regression results show that Attitude toward E-Banking is significantly affected by Perceived UF with ($\beta = 0.334$) and ($p < 0.001$). Analysis shows that Attitude is 33% controlled by Perceived UF. Regression results for the relationship between Attitude and Perceived EOU confirm that there is a significant relationship with ($\beta = 0.174$) and ($p < 0.05$).Thus we can say Perceived EOU contributes 17% toward Attitude. On the Basis of these results we accept our hypothesis H1 and H2 and conclude that Attitude is significantly

affected by Perceived EOU and Per UF.

5.2.3 Perceived Risk (PR), Service Quality and Attitude.

Results for PR confirms the negative relationship toward Attitude toward the E- Banking Adoption with (β = -0.174) and ($p < 0.05$) so we accept the hypotheses H7. Service Quality positively affect the Attitude with (β = 0.260) and ($p < 0.01$). So attitude of People toward E-Banking is 26% influenced by the Quality of the services they are offering to their customers. On the basis of these results our hypothesis H4 is confirmed.

5.2.4 Perceived Risk and Per UF.

Our regression results show that there is no significant relationship between these two variables with (β = -0.170) and ($p > 0.05$) so although there is negative relation but significant value is greater than the minimum accepted value that is 0.05 so our hypothesis H8 is rejected.

5.2.5 Perceived EOU and Perceived UF.

Regression analysis of our study confirms that there is strong positive relationship between Per. EOU and Per.UF with (β = 0.456) and ($p < 0.001$). These results confirm the hypothesis H3.so we can conclude that the more a technology is easy to use the more it will be useful.

5.2.6 Service Quality, Perceived EOU and Perceived UF.

Current study's results show strong positive relationship between Service Quality and Perceived EOU with (β = 0.490) and ($p <0.001$). Results indicate Perceived EOU is 49% contributed by Service Quality. These results confirm our hypothesis H5 which mean Service quality has positive effect on the Perceived EOU. Regression results for Service Quality and Perceived UF link are (β = 0.429) and p ($p < 0.001$) which indicate the strong relationship and confirm our hypothesis H6.

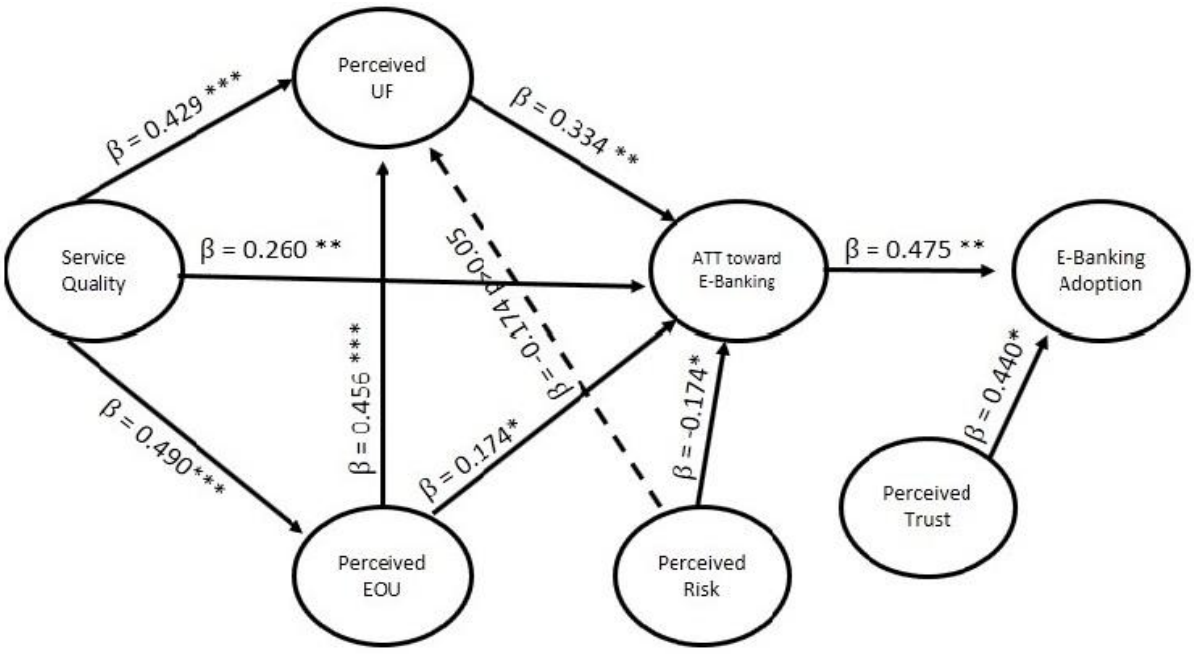
Table 4 Regression results.

Hyp	Variables	Beta (β)	Sig. value (p)	Hyp. Status
H1	Per UF → ATT toward E-Banking	0.334	**	Supported
H2	Per EOU → ATT toward E-Banking	0.174	*	Supported
H3	Per EOU → Per UF	0.456	***	Supported
H4	SQ → ATT toward E-Banking	0.260	**	Supported

H5	SQ → Per EOU	0.490	***	Supported
H6	SQ → Per UF	0.429	***	Supported
H7	Per Risk → ATT toward E-Banking	-0.174	*	Supported
H8	Per Risk → Per UF	-0.174	0.26	Not Supported
H9	Per Trust → Adoption of E-Banking	0.440	*	Supported
H10	Attitude → Adoption of E-banking	0.475	**	Supported

Note:*p <0.05, **p<0.01, ***p<0.00

Structural Research model:



Note: (Insignificant ····· (significant (*p < 0.05, **p < 0.01, ***p <0.001)

6. Discussions:

Research was commenced to create understanding of the attitude of peoples of Pakistan toward the E-Banking. Despite the stupendous growth in technology and its applications still technology adoption rate is exceptionally low in many developing countries including Pakistan. Pakistan is rich in technology adaptation and it comes at 20th number with 20 Million internet users and 100 Million mobile users. Still E-Banking adoption is at infant stage. The purpose of research was to unveil the factors that are prohibiting peoples from the adaptation of E-Banking. Following section of study will discuss these factors with their individual contribution toward the adaptation of E-Banking.

Perceived EOU and Perceived UF have significant positive effect on the attitude of people as both of these are classical TAM variables and like many previous studies Perceive EOU and UF are strong determinant of Attitude. People shape their attitude positive or negative when they think a particular technology is beneficial and require less effort to deal. People usually avoid unnecessary details and complexities. They prefer an easy to use and user friendly system or technology (Venkatesh and Davis, 2000). Finally we conclude that if Banks are able to provide their customers a Banking system which is easy to understand and operate they will adapt it. So these results are consistent with the past researches (e.g. Cheong and Park, 2005; Curran and Meuter, 2005). Perceived Risk is negatively related with the Attitude especially in Pakistan people are Risk averse while doing their banking transactions. Therefore people a less Risky system has more chances for being adapted by peoples in Pakistan. Risk is negatively associated with the attitude. It means if consumer highly believe in the likelihood of suffering loss while using E-Banking, the less will be probability of adaptation. Risk is related to the demographic characters of population i.e. young people are more likely to take risk as compared to old ones. Similarly people who are government employee are more likely to take risk as compared to private job holders or businessmen (Solomon et al, 2008). Service Quality is positively related with Per UF and EOU with β 0.429 and 0.490 and $p < 0.001$which suggest the simple logical conclusion that if the Quality of service offered by bank is high it will be more useful and at the same time high quality ensures less mental effort, so traditional TAM model is incorporated with Service Quality. So it is recommended to the Banks that if they provide high Service Quality people will be more prone to adapt their services. Research hypothesis H8 was rejected with significance value $p = 0.42$ this suggest that there is no strong relationship between Risk and Per UF in our study. People's perception are different regarding Risk and UF we may conclude that although E-Banking involve some risks but it doesn't mean it not useful.

7. Limitations and future research

Despite our best efforts this research suffered from some limitations first of all research is always limited to a particular geographical area, peoples characters, perceptions, values and norm change from place to place i.e. consumer in USA are more risk taker than Pakistani consumer due to cultural values so this factor limits the generalizability of our results. Other limitation may be due to sampling method, we approached to only those persons who were aware of E-Banking while perceptions of other peoples may be different from those selected

in our sample. Finally another most important limitation is that we approached to E-Banking via traditional TAM model ignoring the reality that peoples attitude cannot be completely predicted by TAM there are many other models Like TTF (task technology fit), TRA (theory of reasoned action) and UTAUT (unified theory of acceptance and usage of technology) there is a room for a research that would incorporate these models in determining the attitude of people.

References

1. Guriting, P., &Ndubisi, O. N. (2006). Borneo online banking: Evaluating customer perceptions and behavioural intention. *Management Research News, 29*(1/2), 6-15.
2. Ratnasingam, P., Gefen, D., &Pavlou, P. A. (2005). The role of facilitating conditions and institutional trust in electronic marketplaces. *Journal of Electronic Commerce, 48*(3), 69-82
3. Srinivasan, S. (2004). Role of trust in e-business success. *Information Management & Computer Security, 12*(1), 66-72.
4. Lu, H., Hsu, C., & Hsu, H. (2005). An empirical study of the effects of perceived risk upon intention to use online applications. *Information Management & Computer Security, 13*(2), 106-120.
5. Winch, G., & Joyce, P. (2006). Exploring the dynamics of building, and losing, consumer trust in B2C eBusiness. *International Journal of Retails and Distribution Management, 34*(7), 541-555.
6. Gefen, D., Geri, N., &Paravastu, N. (2007). Vive la diffe'rence : The cross-cultural differences within us. *International Journal of e-Collaboration, 3*(3), 1-15.
7. AC Nielsen Consult (2002), China Online Banking Study, available at: http://estore.chinaonline.com/chinonlbanstu.html
8. Dillon, A., & Morris, M.: User acceptance of information technology: theories and models. http://www.ischool.utexas.edu/~adillon/BookChapters/User%20acceptance.htm
9. Lallmahamood M.: "*An Examination of Individual's Perceived Security and Privacy of the Internet in Malaysia and the Influence of This on Their Intention to Use E-Commerce: Using An Extension of the Technology Acceptance Model*", Journal of Internet Bankingand Commerce,*12, 3,2007/2-26.*
10. Pavlou, P. (2003).Consumer acceptance of electronic commerce: Integrating trust and risk with the Technology Acceptance Model. *International Journal of Electronic Commerce*., 7(3): 101-134.
11. Mayer, R.C., Davis, J.H. and Schoorman, F.D. (1995), "An integrative model of organizational trust", The Academy of Management Review, Vol. 20 No. 3, pp. 709-34.

12. Jayawardhena, C. & Foley, P.: "*Changes in the banking sector – the case of Internet banking in the UK*", Journal of Internet research:Electronic Networking Application and policy, 10, 1, 2000/ 19-30.

13. Sohail, M. S., &Shanmugham, B.: "*E-banking and customer preferences in Malaysia:an empirical investigation",* Information Sciences-Informatics and Computer Science. An international Journal,150, 3-4, 2003/ 207-217

14. Natarajan,T., Balasubramanian S. A., &Manickavasagam S., "*Customer's Choice amongst Self Service Technology (SST) Channels in Retail Banking: A Study Using Analytical Hierarchy Process (AHP)*",Journal of Internet Banking and Commerce, *15, 2, 2010.*

15. P. Chau, (2001), "Influence of computer attitude and self-efficacy on it usage behavior," *Journal of End User Computing*, vol. 13, no. 1,pp. 26-33.

16. F. D. Davis, (1989), "Perceived usefulness, perceived ease of use and user acceptance of information technology," *MIS Quarterly*, pp.319-340.

17. Daniel, E.: "*Provision of electronic banking in the UK and the Republic of Ireland*", International Journal of Bank Marketing, 17, 2,1999/ 72 – 82.

18. Akinyele S.T., &olorunleke K.: "*Technology and Services Quality in the banking Industry: an Empirical Study of various factors in Electronic banking Services*", International business management, 1993-5250, 2010/ 209 -221

19. Aladwani, M. A.: "*Online banking: a field study of drivers, development challenges, and expectations*", International Journal ofInformation Management, 21, 2001/213-225.

20. Baraghani, S., N.: Factors Influencing the Adoption of Internet Banking (Unpublished Master's Thesis). Lulea university ofTechnology. Sweden.2007

21. Brogdon, C.:Banking and the Internet: Past, present and possibilities.ftp://reports.stanford.edu/pub/gio/CS545/CS545I-2000/banking.html

22. V. Venkatesh, , and F. D. Davis (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science* [Online]. 46(2), p18. Available: http://mansci. journal.informs. org/content/46/2/186.abstract

23. Gilaninia,Sh;GhorbaniGhavidelBoeini,S; Mousavian,S.JNajafpour,A;Najibzadeh,M;Esmaeili,H;Babaei,M;ZadbagherSeighalani ,F.(2011). Challenges Application of E-Commerce in Iran, Interdisciplinary Journal Of Contemporary Research In Business, VOL 3, NO 8,pp497-507.

24. Gilaninia,Sh;Taleghani,M;Taheri,T;Mousavian,S.J.(2011). Study of Effective Factors on Customers Trust in Electronic Banking Services (Case study: Melli Bank in Ardabill City), VOL 3, NO 8,pp 472-478.

25. Raihan, A., S. R. Khan, M. R. Alam and K. Rabbi (2001), "Computerization and IT in Banking

26. Sector: Hindrances and Remedies," *Bank Parikrama*(Dhaka: BIBM), Vol. XXVI, No. 1 (March): 95-133.

27. Agarwal, R., &Karahanna, E. 2000. Time flies when you're having fun: Cognitive absorption and beliefs about information technology usage. MIS Quarterly, 24(4): 665-694

28. K. Eriksson, K. Kerem, and D. Nilsson, (2005), "Customer acceptance of internet banking in Estonia," *International Journal of Bank Marketing,* vol. 23, no. 2, pp. 200-216.

29. Y. Wang, Y. Wang, H. Lin, and T. Tang, (2003) "Determinants of user acceptance of internet banking: an empirical study,"*International Journal of Service Industry Management*, vol. 14, no. 5, pp. 501-519.

30. Davis, F. D., "*Perceived usefulness, perceived ease of use, and user acceptance of information technology*", MIS Quarterly, 13, 3,1989/319-340.

31. G. Rigopoulos and D. Askounis, (2007) "A TAM framework to evaluate users' perception towards online electronic payments,"*Journal of Internet Banking and Commerce*, vol. 12, no. 3.

32. Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*;*13:*319–40.

33. Jackson, C. M., Chow, S., & Leitch, R. A. (1997). Toward an understanding of the behavioural intentions to use an information system. Decision Sciences, 28, pp. 357–389.

34. Venkatesh, V. & Davis, F. (2000). A theoretical extension of the technology acceptance model: four longitudinal field studies. *Manag Sci;46:* 186–204.

35. Davis, F.D. (1989), "Perceived usefulness, perceived ease of use, and user acceptance of information technology", MIS Quarterly, Vol. 13 No. 3, pp. 319-40.

36. Gefen, D., Karahanna, E. and Straub, D.W. (2003), "Trust and TAM in online shopping: an integrated model", MIS Quarterly, Vol. 27 No. 1, pp. 51-90.

37. Igbaria, M., Parasuraman, S. and Baroudi, J. (1996), "A motivation model of microcomputer usage", Journal of Management Information Systems, Vol. 13 No. 1, pp. 127-43.

38. Straub, D., Limayem, M. and Karahanna-Evaristo, E. (1995), "Measuring system usage: implications for IS theory testing", Management Science, Vol. 41 No. 8, pp. 1328-42.

39. Teo, T.S.H. (2001), "Demographic and motivation variables associated with internet

usage activities", Internet Research: Electronic Networking Applications and Policy, Vol. 11 No. 2,pp. 125-37.

40. Teo, T.S.H., Lim, V.K.G. and Lai, R.Y.C. (1999), "Intrinsic and extrinsic motivation in internet usage", OMEGA International Journal of Management Science, Vol. 27 No. 1, pp. 25-37.

41. Venkatesh, V. and Davis, F.D. (2000), "A theoretical extension of the technology acceptance model: four longitudinal field studies", Management Science, Vol. 46 No. 2, pp. 186-204.

42. Calisir , F., &Gumussoy, A. C.: "*Internet banking versus other banking channels: Young consumers' view*", International Journal ofInformation Management, 28,2008 /215– 221.

43. Chan, S.C. and Lu, M. T., 2004. Understanding internet banking adoption and use behavior: a Hong Kong perspective. Journal of Global Information Management, 12, 21-43.

44. Rehman, U. R., Rizwan, M., Ahmed, A. D., Ali, N. & Khan, M. H. (2013) E-TAM Model: A Comprehensive Approach To Understand The Adoption Of Electronic Shopping. Journal of Basic and Applied Scientific Research, 3(11), 178-188

45. AL. Zhao, NK. Lewis, SH. Lloyd, and P. Ward, (2010), "Adoption of internet banking services in China: is it all about trust?" *International Journal of Bank Marketing*, vol. 28, no. 1, pp. 7-26.

46. S. Al-Somali, R. Gholami, and B. Clegg, "An investigation into the acceptance of online banking in Saudi Arabia," *Technovation*, vol. 29, pp. 130–141, 2009.

47. Pavlou, P. (2003).Consumer acceptance of electronic commerce: Integrating trust and risk with the Technology Acceptance Model. *International Journal of Electronic Commerce*., 7(3): 101-134.

48. Bauer, R.A. (1960), "Consumer behaviour as risk taking", in Cox, D.F. (Ed.), Risk Taking and Information Handling in Consumer Behaviour, Harvard University Press, Cambridge,MA,pp. 22-3.

49. Jacoby, J. and Kaplan, L.B. (1972), "The components of perceived risk", in Venkatesan, M. (Ed.), Proceedings of The Third Annual Conference of The Association for Consumer Research, Association for Consumer Research, Duluth, MN, pp. 382-93.

50. Pitt, L.F., Watson, R.T., &Kavan, C.B., (1995)," Service Quality: A Measure Of Information Systems Effectiveness," MIS Quarterly.

51. Dilijonas, D, Krikščiunien, D., Sakalauskas, V. &Simutis, R. (2009). Sustainability Based

52. Service Quality Approach for Automated Teller Machine Network. Retrieved

November 14,2009, from http://www.vgtu.lt/leidiniai/ leidykla/ KORSD_2009/PDF/241-246-p100-Dilijonas-47.pdf.

53. Al-Hawari, M., & Ward, T. (2006). The effects of automated service quality on Australian banks' service performance and the mediating role of customer satisfaction.Marketing Intelligence & Planning, Vol.24, No.2, pp.127-147

54. Khan (2010), An Empirical Study of Automated Teller Machine Service Quality and Customer Satisfaction in Pakistani Banks, European Journal of Social Sciences – Volume 13, Number 3 (2010) pp 333-344

55. Mian, T. S and Rizwan, M. (2013) Determinants of Customer intention to use Mobile Banking: An empirical research based on Extended Technology Acceptance Model. Journal of Basic and Applied Scientific Research, 3(11), 201-211

56. Theodosios, T., and George, S. Concept of security and trust in electronic payments.Computers and Security, 2005, 10–15.

57. McKnight, D. H., Choudhury, V., &Kacmar, C. (2002b). The impact of initial consumer trust on intentions to transact with a web site: A trust building model. The Journal of Strategic Information Systems, 11(3–4), 297–323.

58. Kim, G., Shin, B., & Lee, H. G. (2009). Understanding dynamics between initial trust and usage intentions of mobile banking. Information Systems Journal, 19(3),283–311.

59. Lin, H.-F. (2011). An empirical investigation of mobile banking adoption: The effect of innovation attributes and knowledge-based trust. International Journal of Information Management, 31(3), 252–260.

60. Zhang, Y., Fang, Y., Wei, K.-K., Ramsey, E., McCole, P., & Chen, H. (2011). Repurchase intention in B2C e-commerce – A relationship quality perspective. Information & Management, 48(6), 192–200.

61. Mayer, R. C., Davis, J. H., &Schoorman, F. D. (1995). An integrative model of organizational trust. The Academy of Management Review, 20(3), 709–734.

62. Zahedi, F. M., & Song, J. (2008). Dynamics of trust revision: Using health infomediaries. Journal of Management Information Systems, 24(4), 225–248.

63. Suh, B. & Han, L.: "*Effect of Trust on customer acceptance of Internet Banking*", Electronic Commerce Research and Application", 1,2002/297 – 363.

62. Ajzen, I. (1988). Attitudes, Personality and Behavior. Dorsey Press, Chicago

63. F. Davis, (1993). User Acceptance of Computer Technology: System Characteristics, User Perceptions. *Int. J. ManMachine Studies* [Online]. 38(3), pp. 475-87.Available: http://deepblue.lib.umich.edu/bitstream/2027.42/30954/1/0000626.pdf

64. Al-Somali SA, Gholami R, Clegg B (2008). Internet Banking Acceptance in the Context of Developing Countries: An Extension of the Technology Acceptance Model..

65. Curran, J.M. and Meuter, M.L. (2005), "Self-service technology adoption: comparing three technologies", Journal of Services Marketing, Vol. 19 No. 2, pp. 103-14.

66. Lee M-C: "*Factors influencing the adoption of Internet banking: An integration of TAM and TPB with perceived risk and perceived benefit"*, Electronic Commerce Research and Applications,doi:10.1016/j.elerap.2008.11.006,2009.

67. Alhamadni, M., Aljaderi, A., Qandelji, A.,Bani Hani, A., & Abu zeneh, F.

Research Methodology: First Book: The basics of scientificresearch. 1st Edition, Amman. Amman Arab University forGraduate Studies.2006.

68. Dane, F.: Research Methods. Cambridge: Thomas Brooks. 1990.Daniel, E.: "*Provision of electronic banking in the UK and the Republicof Ireland*", International Journal of Bank Marketing, 17, 2, 1999/ 72 – 82.

69. Jackson, P.: Desk Research. London: Kegan-Paul. 1994. Jayawardhena, C. & Foley, P.: "*Changes in the banking sector – the caseof Internet banking in the UK*", Journal of Internet research:Electronic Networking Application and policy, 10, 1, 2000/ 19-30.

70. Zikmund, W.R. (1997) "Business Research Methods" (5th Ed.), Texas: The Dryden Press.

71. Baraghani, S., N.: Factors Influencing the Adoption of Internet

Banking (Unpublished Master's Thesis). Lulea university of

Technology. Sweden.2007

72. Polit, D., &Hungler, B.: Essentials of Nursing Research: Methods and

Application. J.B. Lippincott Co., Philadelphia.1985

73. Nunnally, JC. (1970). Introduction to Psychological Measurement. New York: McGraw-Hill.

74. Cheong, J.H and Park, M.C 2005, "Mobile internet acceptance in Korea", Internet research, Vol. 15 no 2 pp125-40,

75. Venkatesh, V. (2000). Determinants of perceived ease of use: integrating control, intrinsic

motivation& emotion into the technology acceptance model. *Information Systems Research,*

11(2), 342-65.

76. Solomon, M.R., Dann, S., Dann, S. and Russell-Bennett, R. (2008), Consumer Behaviour: Buying,Having, Being, Prentice-Hall, Hong Kong.