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Impact of Risk and Ethics on Adoption of Mobile Banking in Pakistan

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Abstract
Mobile banking is information based one of the newly introduced digital banking services in Pakistan. The objective of this research was to analyze the impact of risk and ethics on consumer behavior towards adoption of mobile banking in Pakistan. This research was totally based on primary data, which was collected during the field survey through questionnaire from 500 students of private and public universities of Pothohar region (District Islamabad/Rawalpindi). The correlation and regression analysis was calculated by using SPSS software. The correlation results showed that there is insignificant relationship with Ethic, and significant relationship was found with Risk. The regression results showed thatR square = 0.621, which stated that the independent variables (Risk and ethis) have 62% effect on dependent variable Mobile banking adoption and the model can predict the research results. So, ethic is main hurdle for mobile banking adoption. The findings are helpful for managers to reorganize their business plans to capture maximum latentbusinesses.
Keywords: Telecom sector, Mobile banking Adoption, Risk, Ethics.

1. Introduction

It has been noted from lots of literature reviewed and published reports that Millions of dollars are spent to build the complete system of mobile banking but it is not being used by even potential customers (Luarn and Lin, 2005). The advances in telecomm sector, electronics and Information Technology (IT) the novel change have been seen in banking technologies to handle daily banking affairs. In most countries of the world and especially leading e-banking countries the e-contracts have exceeded up to 50% (Pikkarainen et al., 2004). Due to evolutionary changes in world, the banks have shifted on corresponding strategies. The changings in social, regulatory requirements, customer preference, competition, and technology have regularly undergone the financial sector specially banking sector (Giannakoudi, 1999; Byers &Lederer, 2001). Pakistan Telecommunication market is providing different cellular communication facilities, its services and infrastructures have improved dramatically and in 2008, once become the world third fast growing Telecommunication market. After the development of deregulation policy of Pakistan, telecomm sector welcomed the foreign investors and provided equal investment opportunities for all. The new entrant mobile operators addressed retail payments transactions, including micro-payments. These solutions provided the possibility of pay for the purchases of small values products (e.g. fast foods from restaurants), in vending (e.g. soft cold drink from vending machines), ticketing (e.g. bus ticket), mobile services (e.g. mobile entertainment), mobile games, internet services, etc.

Same time, the banks must prepare to protect their franchises against threat from not the financial institutions, also from mobile carriers, credit card services providers, and other all nonbanks competitors want to help customers conduct financial transactions where they and mobile phones are. In Pakistani environment bankers have been talking to use cell phones as the channel for consumer banking as long as energy sectors have been trying to develop solar power very much affordable, but it has been taken a union of factors to make the mobile banking a big reality (deloitte, 2010).

As Pakistan is an economically growing country of the whole world but in recent years its telecommunication sectors have advanced very tremendously. According to Pakistan Telecommunication Authority there were more than 122 million mobile users at March 2013 and the number of users is gearing up for further more growth with annual cellular mobile teledensity of 68.8%. There are six mobile operators

working in Pakistan, People from any income group using the telecom services as a result of reduced telecom rates and foreign investment (AFACT, 2013).

1.1 Research gap

As from last few recent years IT and Telecom sector in Pakistan has made a great progress, especially in the field of wireless internet and launching of 3-G technologies is still in process. Almost all the telecom operators are providing the facility of wireless internet and trying to launch 3-G network to enhance the capability of wireless internet and trying to provide very fast internet speed. Therefore the number of mobile users is rising day by day and the banking sector is very vastly providing on-line banking facilities, especially mobile baking facilities. As mobile banking is in its nascent stages and there is huge gap to be filled. In Pakistan a very little research has been made on mobile banking and no research has been made for adoption of mobile banking by the factors like Risk and Ethics. Therefore it is deem necessary to research the impact of these factors on adoption of mobile banking in economically and technologically developing country like Pakistan.

1.2 Problem statement

As the human behavior is complex and unpredictable therefore it is much difficult to know about the behavior for adoption of mobile banking. In modern world due to unpredictable advancement in technology the mobile phone with internet connection has become the specific need by all customers. Producing more without incurring cost is almost the basic aim of every business organization. For the successful achievements of aims and sustaining in business by producing quality product and service, among several factors, IS factor is the most important one. Lot of studies has been made to find out the required investment for information system and factors that integrate the IS into business. These researches found lot of factors that impact the users to adopt new technologies. As in a study (Cheney and Mann, 1996) put lot of efforts from mid-eighties to develop such a model which may helpful to measure the technology acceptance. Mobile banking is in the nascent stage and becoming the basic channel of contact for the banking needs of customers. So, it is deem necessary to understand the factors like risk and ethics influencing customer behavior for adaptation of mobile banking in Pakistan.

1.3 Research questions

The basic aim of this research was to develop the technology acceptance model for the mobile banking adoption in Pakistan with the investigation of factors like risk and ethics. So we have following questions for this research:
Question No. 1When emerging and advanced technology is presented to the consumers then how consumers behave regarding the adoption?
Question No. 2 what will the role of this research?
Question No. 5 What will the critical role of risk for adoption of mobile banking?
Question No. 6 How ethic influences consumers to adopt mobile banking?

1.4 Objectives and aims

1.5 Overall Objective

This research aims to find out the reasons that put the great effect on mobile banking adoption in Pakistan.

1.6 Specific Aims

- To develop the research model from literature reviewed
- To find out the perceived risk will be barrier for mobile banking adoption.
- To find out specific influence of ethics on mobile banking adoption.

1.7 Importance of the research

This research will especially helpful for banking sector and other commercial organizations attached to the banking sector. As the customer attraction is main focus of banking sector, the findings and recommendation of this research will help to analyze and restructure their strategies to capture maximum potential customers. The results may be used by researchers and allied industries to understand the customer behavior.

2 Litrature review

2.1. Basics of mobile banking

A breath taken space has been taken by mobile usage since the past decay; it is because of very cheaper rates of mobile phones and lower rates of air time. The mobile users are changing as the trends are changing, so shifting from traditional phone sets to smart phones and tablets. This situation opened up potentially lots of opportunities for the banking sectors around the globe. In these circumstances the banks have not so widely taken the advantages.

In South Africa there is joint venture between Standard Bank and Mobile Telephone Network (MTN),

both banks provide mobile offering in the shape of mobile money account which provides customer access to very limited banking facilities. In Philippine, the Globe Telecom provides the facility of e-money account tied with Subscriber Information Module (SIM) card. The cash is send and received at wide range through company's own dealers. Globe telecom provides the facility of fund transfer, pay bills, loan payments and shopping through e-money (Lyman et al., 2006).

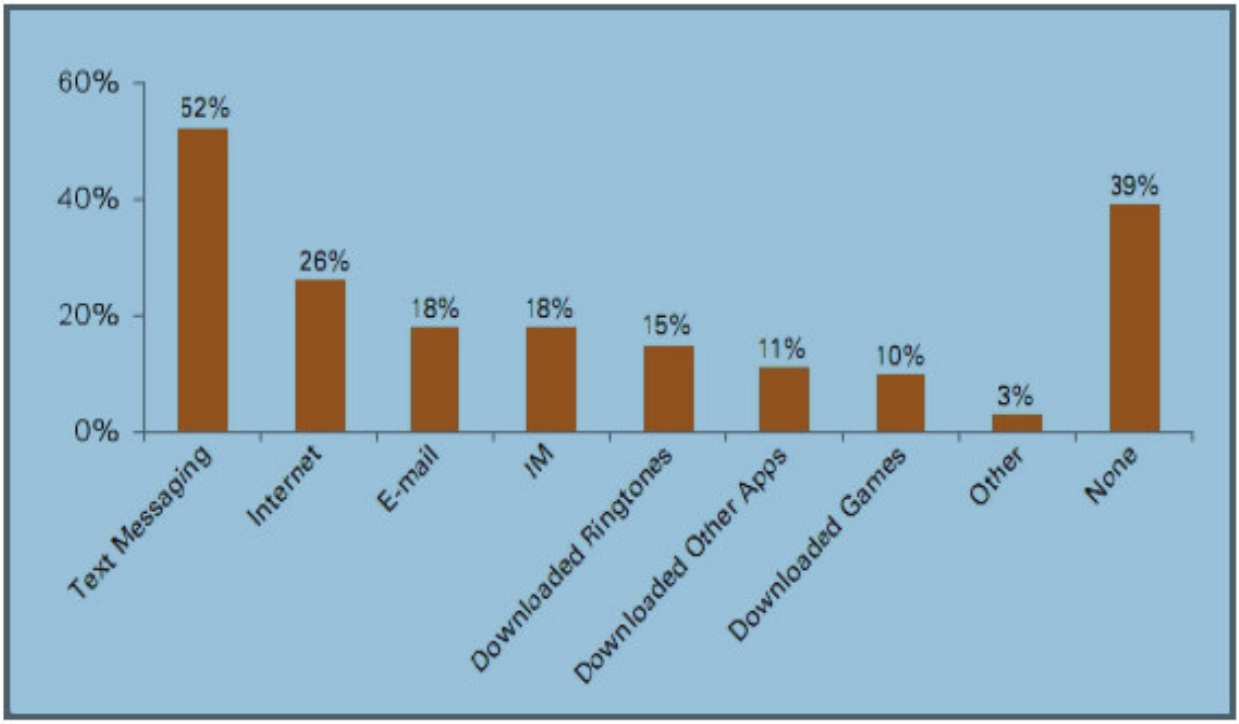

Figure 01: Rank the most important features of cell phone (Verisign, 2009)

A survey done by verisign regarding the voice feature of cell phone, told that in newzeland 52% respondent like messages (Verisign, 2009). The figure above shows the different features of cell phone which were used by Verisign in survey.

At current position the Africa is top in ICT due to innovations. The cell phones penetration rate was exploded since the 2000. Most of the firms are African local firms this market of ICT, in 1998 there total number of mobile users were less than 2 million. In the year 2009, the total figure has been raised up to 400. It is the high rate of annual growth over the last decay and a lot of potential is there (Jerry, 2010).

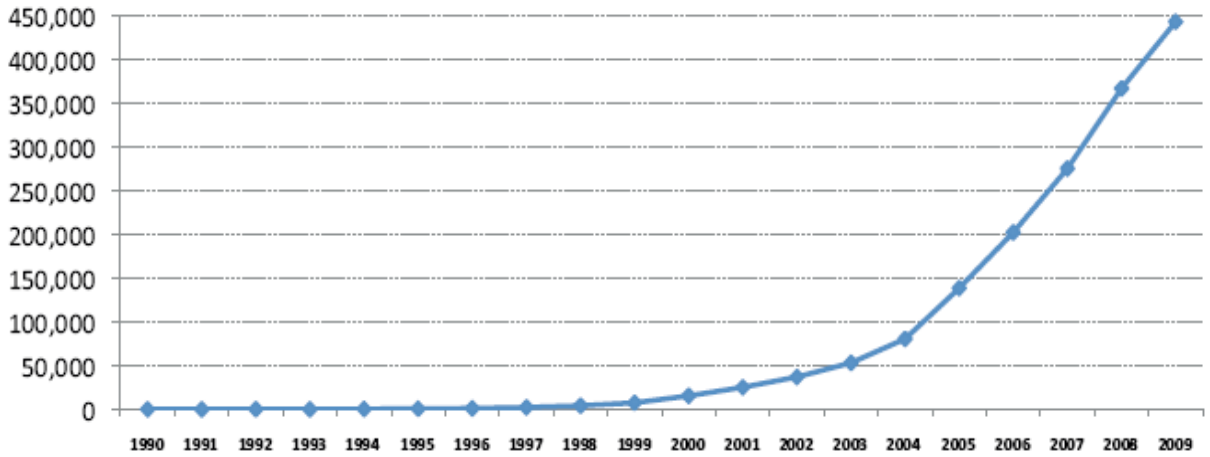

Figure 02: The mobile banking in South Africa (Jerry, 2010)

2.2. Mobile banking in the world wide

A worldwide survey done by American Concrete Institute (ACI) in figure below indicates that, in India 76% mobile respondents' use mobile banking. This is highest figure of the world as compared to China 70%

respondents' use mobile banking, 38% in USA, 31% in UK and 61% in South Africa. The worldwide average stands at 35% (Sunil andDurga , 2013).

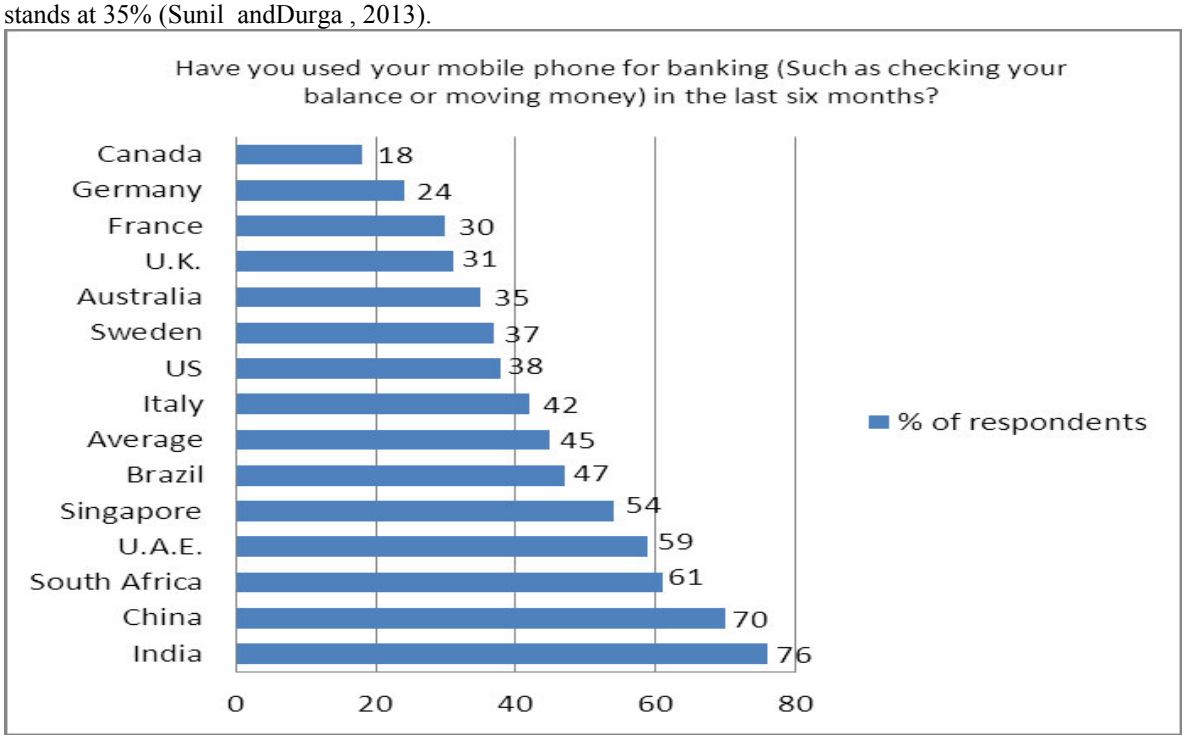

Figure 03: ACI Worldwide survey (Sunil andDurga, 2013).

2.3. Mobile Banking in Pakistan

A latest report issued by Pakistan Telecommunication Authority (PTA) the number of mobile phone users has been raised up to 120.5 million since September 2012 (Attaa, 2012). There is only 12% use of cell phone by formal banking (Mahmood, 2011). The mobile banking is increasing as increase of mobile users in Pakistan, according to a report by (CGAP, 2011) the mobile banking services providers have made a big investment for infrastructure to provide the facility till low income population. Easypaisa by TameerMicrofinace bank Ltd. and Omni by United Bank Limited (UBL) are the largest mobile banking service providers in Pakistan since October, 2008 furthermore, Muslim Commercial Bank (MCB) Bank Ltd., Habib Bank Limited (HBL), Askari Commercial Bank, Meezan Bank Ltd., Bank,Waseela Microfinance Bank, and Dubai Islamic Bank are running their branchless banking pilots.

2.4. Risk:

The expectation of losses of desired outputs by consumers is known as the risk (Ba and Pavlou, 2002). It is a great concern for both banks and consumers that any one may possibly make illegal transactions and fraud (Ba and Pavlou, 2002). Time risk, physical risk, psychological risk, service performance risk, financial risk and community risks are different types of risks both for banks and consumers and in mobile banking (Forsythe and Shi, 2003).

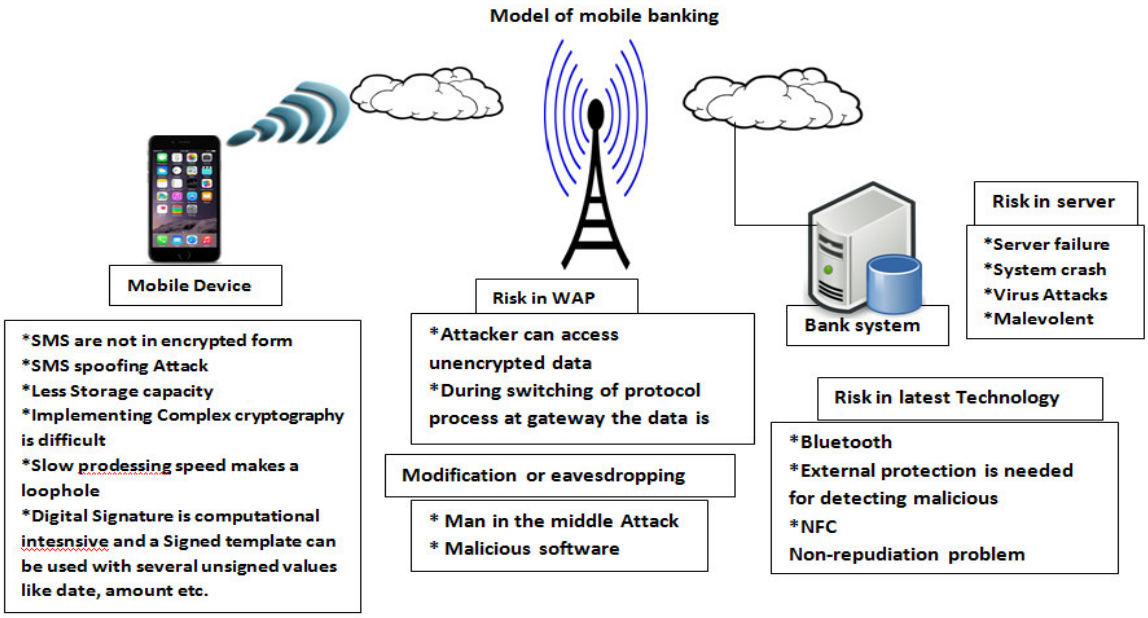

Figure 17: Risk in mobile bank service for the customer (Own created)

In Mobile banking there two zones, one for the customer and other for the banks, as shown in figure. In this case there are some chances of security threats regarding the transactions of payment through mobile phone. As compared to traditional banking, there is high risk in mobile banking; because all the transactions are done through wireless network which creates the sense of risk in mind of consumer like as hacking might cause personal data loss and financial loss. According to (Webster and Ainsworth, 1969; Bauer, 1960) the risk causes an extra dimension for the adoption. A study by (Mattila, 2002) in mobile banking proposed that the use of mobile phone may be very risky. The main objectives of mobile banking are the security of functional and sensitive data which must be protected by illegal and unauthorized usages. A foolproof security must be designed for this purpose (Brown et al., 2004). Lot of searchers has given lot of stress in their studies that only security is not the main issue to stop to adopt mobile baking (Suoranta, 2003; Laukkanen&Lauronen, 2005; Soroor, 2005).

2.4.1. Psychological risk

Some researchers found that risk is only the thinking of consumer not the characteristics or feature of product or service (Fain and Roberts, 1997). It is said by some researchers that risk changes the thinking of consumers to use technology (Laforet, and Li, 2005). The tradition and image risks are refer to psychological barriers mostly caused due to conflict of customers believes (Ram and Sheth, 1989). The investigations in academic, suggested that the psychological theory and sociological theory influenced the users to start adopting mobile banking (Yang, 2009).

2.4.2. Security risk

As the wireless technology has become more advanced and has spread in wide range same in mobile banking different types of security risks has been raised. One of the main and most important issues faced by the users is security which works as obstacle in adoption of new technology (Wang et al. 2006). According to (Mattila, 2002) it is trustworthy to use mobile in banking sector.

While (Fain and Robberts, 1997) proved that risk is not the product it is the perception of human. This perception influences the consumer to adopt mobile banking. A research conducted by (Wang et al. 2006) suggested that the individual may worry about security like as loss of connection, data transmitted and loss of money concern while using mobile banking. According to (Black et al. 2001; Kuisma et al. 2007) the mobile banking services providers must develop such a mechanism which ensure the security of financial transactions and very sensitive data. The security must fool proof and not allowed to unauthentic usage. As (Brown et al. 2003; Laukkanen and Lauronen, 2005) suggested that the sensitive information must only be used by related persons, the users must give the surety of their financial transactions which will influence to adopt. Many researchers like (Souranta, 2003; Laukkanen and Lauronen, 2005; Soroor, 2006) argued that only the security is not great concern which resists the customers to adopt the mobile banking. As (Souranta, 2003) suggested that there are many other barriers to adopt the mobile banking such as personalization, mobility and location

2.4.3. Financial risk

As the banking has become very important need of life and the risk of loss of money could hamper the experiences with banking and other financial institutions. From financial risks a major obstacle to adopt mobile banking is the cost of mobile banking (Tarasewich, et al. 2002). The current mobile banking is linked with mobile phone so there should a mobile set and wireless internet connection which causes financial problems (Nah, et al. 2005). A study by (Luarn and Lin, 2005) argued that financial costs create negative impact on behavioral intention for adoption of mobile banking. The analysis done by (Sadi et al. 2010) in the Sultanate of Oman by 196 respondents, resulted that high financial cost was main problem for not adopting mobile banking. The misuse of bank account, the error in transaction and monetary losses are known as the financial risk (Lee and Kim, 2007). As in study made by (Lee and Kim, 2007) proposed that there are basically five risks considered by both consumers and banks, performance risk, social risk, security risk, financial risk, and time risk. All these risks are hurdles for adoption of mobile banking and especially the social risks were found with insignificant effects on the behavioral intention for mobile banking adoption (Lee and Kim, 2007). After studying lot of literatures following hypothesis is suggested.

Hypothesis 1:Risk has negative effect on mobile banking adoption.

2.5. Ethics:

There are lots of chances are unethical conduct in business, it is due to moral and very critical ethical issues in mobile banking organizations, as these financial institutions have yet nor worked to handle these issues (Boatright 2009). Every institution has their own written industry principles, operating methods and ethical codes (Badi and Badi, 2009). There is lack of secrecy and confidence on internet, so it is a big obstacle for mobile banking adoption (Rhee and Riggins 2001; Quelch and Klein, 1996; Bhimani, 1996; Cockburn and Wilson 1996).

A study made by (Gomez, 1999) argued that without implementation of ethical values by mobile banking institutions in their business, especially when the business going to failure state, the customer satisfaction and organizational objectives are nor achieved. No work has been done by the different financial institutions regarding the ethic, as the telecom companies are introducing emerging technologies very rapidly. It will conduct of unethical business and will destroy the trust of both customers and financial institutions, if no effective steps have been taken for ethical way of transactions (Boatright 2009). As each business firm has its own business principles, methods, procedures, processed same each firm must have very clear and written ethical codes (Badi and Badi, 2009).

2.5.1. Confidentiality

Confidentiality and privacy is required by the customers while using the mobile banking, the customers have to provide some sensitive information to both telecom operators and banks. The mobile phone may be loses the operating record and there is no strong technical mechanism to recover the record, it works as hurdle for the mobile banking. To better understand the customer behavior for online mobile banking (Laforet and Li, 2005) suggested that security and confidentiality were known as perceived risk and perceived that confidentiality was the most significant determinant that influencing the use of mobile banking. A research made by (Muhammad, et al. 2008) suggested that the privacy and confidentiality are both important factors under the paradigm of supposed reliability.

2.5.2. Cultural influence

The word culture was first introduced by Hofstede, according to Hofstede “the shared program design of the mind which makes the difference among the members of one group to other group”. The initial meaning of culture was the categories and groups of people that contain something very common like as ethnicity, gender, nationality and religion, (Srijumpa and Speece, 2002). There are many types of elements culture but there is a critical role of uncertainty avoidance which gives the trust to the customers (Cheolho, 2009).

A survey made by major banks in Malaysia (Muhammad, et al. 2008) suggested that the intention of individual to use mobile banking was affected significantly by those people which were surrounding them. A study made by (Singh et al. 2010) proposed that the decision of individual to use mobile banking services was influenced by family and friends. According to (Singh et al. 2010) suggested that mobile banking consumers are not just only the technology users, they are also the part of social system.After the very careful and deep study of literature, following hypothesis is suggested.

Hypothesis 2: Ethics has negative effect on adoption of mobile banking.

2.6. Proposed Research Model

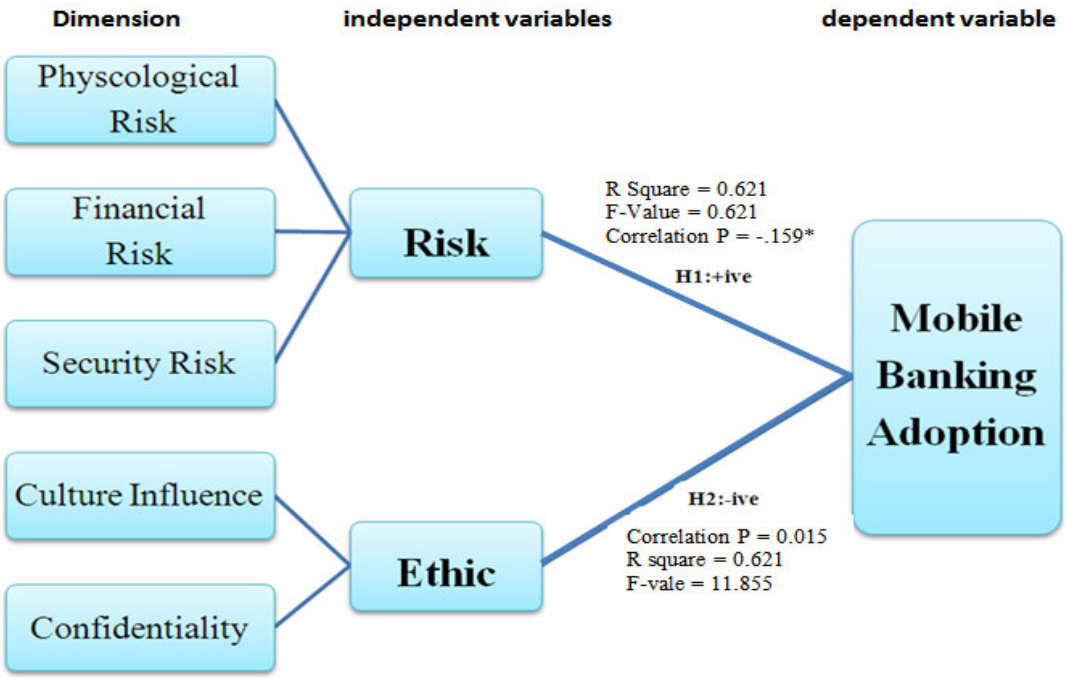

Figure 4: Technology acceptance model (TAM) for adoption of mobile banking (Own Created)

3.Research Design And Method

Our research is purely primary research; the method it includes is quantitative method approach. Researcher also conducted questioner survey after developing questioner. First of all the researcher took reliability test of questioner by analyzing the data in SPSS. This research is completed on the bases of testing of hypotheses, where different types of certain relations were investigated and interdependent of two or more than factors in a situation. Different assumptions are made to accept or reject the model.

3.1 Population.

It shows the area where researcher done the study. Targeted area of researcher is called population. The Population of our research was the students of public and private sector universities of Islamabad/Rawalpindi, because Islamabad and Rawalpindi are two twin cities having international level of universities providing study facilities. For study purpose lot of students comes from all over the Pakistan. All these students have great concern with banking sector. It is a bit easy for researcher to easily and very accurately collect data from the students of public/private sector universities of Islamabad and Rawalpindi.

3.2 Sample

Random sampling technique was used in the study. The researcher provided equal chance to each student to take equal participation in survey. This technique made our research more important and so it increased the chance of acceptance and correctness. Sample size of our research is 200 students. The questionnaire ware divided into different parts lying on the variables, we used in the research. We distributed and collect the questionnaire from the student of different public universities. Mostly our respondents were Bachelor, Master and M.Phil. Students. We motivated every student to involve in the survey and provide their responses on the spot. After distributing of the five hundred questionnaires four hundred and seventy two were consider suitable and the remaining were not fulfilling our requirements. So the responding rate was 94.4 %.

3.3 Source Of Data

Primary data was collected for this research. After thoroughly study of literature review questioner was developed and was filled from selected population.

3.4 Data Collection:
The respondents of our research were randomly selected students from the public and private universities of Pothohar region District Islamabad and Rawalpindi, Pakistan. All the individuals have been selected for the survey of questionnaire were asked to fill the questionnaire on spot or send back through friends or emails, so data was collected by this way. During the development of questionnaire it was decided that the questioners have different benefits such as:

- Time saving
- Unbiased data
- Short sample
- Cost reduction

3.5 Instrument For Data Collection
The survey questionnaire was developed and primary data was collected by the filling of questionnaire at the spot from the sample of 200 respondents who use mobile banking for daily use. Initially the results of thirty questionnaires were gathered for reliability test and the data will be tested for its reliability. If it was found reliable then a complete survey will be carried out. Random sampling technique will be applied and the SPSS software will be used to find out regression, correlation and Analysis of Variance (ANOVA) among different variables in order to reveal the results of

3.6 Structure Of Questionnaire Development
An open ended questioner was used in this research. The questionnaire is the combination of positivistic and phenomenological methodologies. In first paragraph short request was sent to respondent. In second paragraph we insured the student that our research is for educational purpose. After completing second paragraph the first section starts which consist of demographic information of respondents as like:
Section one:
Age
Gende
Education
Section two:
In this sectioned each four variable related questions are asked from respondents. A likert scale was designed in front of each question. The scale ranges from 1 up to 5. In this scale 1 was showing strongly agree, for agree 2 was used, three for neutral, for disagree 4 was used and 5 was showing strongly disagree.

3.7 Research Rate
Total five hundred questionnaires were given to the students and 472 were received from respondents which are fully completed and accurate. So the result of research rate is shown in following table.
Table 01: Research rate

Number of Questionnaire	Number of response	Rate
500	472	94%

3.8 Data Analysis Strategy
After collection of data it will be analyzed in SPSS software. Result of data will be discussed with different expert opinions and researcher developed a theory. Different types of test are applied as like

3.9 Reliability
First of all 30 questionnaires are distributed to selected population for pilot testing. Actually pilot testing shows the reliability of the questionnaire. If the questionnaire is reliable then it can be used for further survey. The questionnaires were distributed among different university students, final results showed that our questionnaire is very suitable for research process.

3.10 Demographic Analysis
As the data was collected through questionnaire and circulated to the students of private and public sector universities of Islamabad and Rawalpindi. The respondents contained following demographic profile regarding the demographic analysis.

3.11 Statistics
As the below table shows that there are total 472 observations according to gender, age, and qualification and there is no any missing observation.

Table 02: Statistics

	Gender	Age	Qualification
N Valid	472	472	472

3.11.1 Gender wise statistics:

Gender wise statistics shows that there are total 472 male and female respondents. The amount of male respondents is 296 which are 62.6% of total respondents with valid and cumulative percent of 62.6%. While the female respondents are 176 which 37.4% are of total 472 respondents having valid and cumulative percent of 37.4%.

Table 03: Gender

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	296	62.6	62.6	62.6
Female	176	37.4	37.4	37.4
Total	472	100	100	100

3.11.2 Age Analysis

In age analysis there were three age groups ranging 18-25 years, 25-30 years and 30-35 years with the frequency of, there were 143 young respondents having age of 18-25 years, they are the 42.1% of the total. There were 129 respondents of the age group of 25-30 years which is 29.6% of total respondents and 200 respondents were from age group of 30-35 years which is 28.3% of the total.

Table 04: Age

Age Years	Frequency	Percent	Valid Percent	Valid Percent
18-25	143	42.1	42.1	42.1
25-30	129	29.6	29.6	29.6
30-35	200	28.3	28.3	28.3
Total	472	100.0	100.0	100.0

3.11.3 Qualification analysis

Table 05: Qualification

Qualification	Frequency	Percent	Valid Percent	Cumulative Percent
Bachelor	143	30.3	30.3	30.3
Master	129	27.3	27.3	27.3
MS/M.PHIL	100	42.4	42.4	42.4
Total	472	100.0	100.0	100.0

As the above qualification table shows that 143 respondents were having Bachelor qualification which are 30.3% of total and 129 respondents were Master which is 27.3% of total. While the total number of MS/M.Phil. respondents were 100 respondents having the percentage of 58.2% of the total respondents.

3.12 Correlation Analysis

According to (Cooper and Schindler, 2011) correlation study identifies the association among two or more factors. Correlation research design has been selected to answer the relationship among research factors and questions.

Table 06: Correlation analysis

		Ethics	**Risk**	**Mobile Banking Adoption**
Ethics	Pearson Correlation Sig. (2-tailed)	1		
Risk	Pearson Correlation Sig. (2-tailed)	.366** 0.000	1	
Mobile Banking Adoption	Pearson Correlation Sig. (2-tailed)	0.015 0.844	-.159* 0.038	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

In the case of research on mobile banking adoption in Pakistan, there are two independent variables, Risk and Ethics, and one dependent variable like Mobile Banking Adoption. To develop more clear understanding the research results of correlation analysis are explained making comparison with our proposed research hypothesis.

Hypothesis 1: Risk has negative effect towards adoption of mobile banking.

The correlation research result regarding the Risk factor given in above correlation matrix is as -0.159*, at p= 0.038 with the confidence interval of 95%which means only there are 5% chances of variations in results. The research result proved our proposed research hypothesis that the risk has negative effect on adoption of mobile banking. So it is concluded that "Risk has negative significant correlation with adoption of Mobile Banking in

Pakistan".

Hypothesis 2: Ethics has negative effect on adoption of mobile banking.

As the proposed research hypothesis was Ethics has negative effect on adoption of mobile banking. But it has been noted in this research that, the correlation result is 0.015 at p= 0.844 having no any confidence interval. The p value shows the significance level which is 0.844 and is beyond the significance level in between 0.01 to 0.05. This result is interpreted as "Ethics has insignificant relationship with mobile banking adoption". So the research results don't satisfy the proposed hypothesis

3.13 Regression analysis

3.13.1 Model Summary

Table 07: Model summary

Model	R	R square
1	0.470	0.621

a. Predictors: (Constant), Risk, Ethics

As the above table shows the model summary of regression analysis between independent variables likeRisk and Ethics of the development of technology acceptance model for adoption of mobile banking in Pakistan with the dependent variable mobile banking adoption. Her R is square root of R-Square and shows the correlation between the predicted and observed values of dependent variable. The value of R= 0.470 and R square shows the strength of association, how much independent variable change or impact the dependent variable. Higher the value of R square shows more betterments or higher level impact of independent variable on dependent variable. If the R square value is greater than 50% it shows the model is significant if less than 50% than it show the model is insignificant. In this research the value of R square = 0.621, which means that the independent variables like Risk and Ethics have 62% effect on dependent variable like Mobile Banking Adoption.

3.13.2 ANOVA

Table 08: Anova

Model		F-Value	Significant
1	Regression	11.855	0.000

a. Predictors: (Constant), Risk, Ethics

b. Dependent Variable: Mobile Banking Adoption

As the above table shows the ANOVA (Analysis of Variance) between independent variables likeRisk and Ethics with the dependent variable Mobile Banking Adoption. In this research the F-value = 11.855 and significant value is 0.000 which shows the high level of significance and the group of independent variables Risk and Ethics can be used to reliably predict the Mobile Banking Adoption (the dependent variable). So this research proved that the model is very good and fit for research. The group of independent variable can predict the dependent variable.

3.13.3 Coefficient

In the coefficient table below where each of the individual variables is listed, we study the ability of each individual independent variable to predict the dependent variable. The standardized Beta shows the comparison of magnitude of the coefficients to know that which one has more effect. Higher the value higher will be the effect and larger beta values are associated with the larger t-values.

Table 09: Coefficient

Model	Standardized Beta	T-Value	Significant
(Constant)		3.233	0.001
Ethics	0.018	0.241	0.810
Risk	-0.059	-0.776	0.439

Dependent Variable: Mobile Banking Adoption

3.13.4 Regression analysis of Risk and Mobile Banking Adoption

Table 10: Regression analysis of risk and mobile banking adoption

Model	Standardized Beta	T-Value	Significant
Constant		3.233	0.001
Risk	-0.059	-0.776	0.439

R = 0.470

R-Square = 0.621

F-Value = 11.855

The above given coefficient table shows that the independent variable Risk has negative impact on our dependent variable mobile banking adaption because the standardized beta value is -0.059 which shows that mobile banking adaption is not effected with Risk and the t-value -0.776 also confirm that Risk negatively

affects the mobile banking adaption.

3.13.5 Regression analysis of Ethics and Mobile Banking Adoption

Table 11: Regression analysis of ethics and mobile banking adoption

Model	Standardized Beta	T-Value	Significant
Constant		3.233	0.001
Ethics	0.018	0.241	0.810

R = 0.470

R-Square = 0.621

F-Value = 11.855

The independent variable Ethics has very low impact on our dependent variable mobile banking adaption because the standardized beta value is 0.018 which shows that mobile banking adaption is very less effected with Ethics and the t-value is also greater than 1 which confirm that does not affects the mobile banking adaption.

4 Discussion About The Findings Of Research

4.1 Correlation

As this research was totally based on primary data which was collected through questionnaire from 500 public and private university students of twin cities of Islamabad and Rawalpindi, Pakistan. The collected data was analyzed for correlation and regression. The correlation results showed the following details, which also tell the details about our search hypothesis.

Hypothesis 1: Risk has negative effect towards adoption of mobile banking.

The correlation research result regarding the Risk is as -0.159, at p= 0.038 with the confidence interval of 95%which means only there are 5% chances of variations in results. The research result proved our proposed research hypothesis that the risk has negative effect on adoption of mobile banking. So it is concluded that "Risk has negative significant correlation with adoption of Mobile Banking in Pakistan". Mean different risks like security risk, financial risk and psychological risk discourage the users to adopt mobile banking. But interestingly our research proved that the consumers living at Pakistan are aware of different types of risks and are not frightened from these different risks. The research results also indicate that in banking sector of Pakistan gives the full safety and security of financial transactions. If the mobile banking is spread by the entire private and public sector banks consumers are willing to adopt.

Hypothesis 2: Ethics has negative effect on adoption of mobile banking.

As the proposed research hypothesis was Ethics has negative effect on adoption of mobile banking. But it has been noted in this research that, the correlation result is 0.015 at p= 0.844 having no any confidence interval. The p value shows the significance level which is 0.844 and is beyond the significance level in between 0.01 to 0.05. This result is interpreted as "Ethics has insignificant relationship with mobile banking adoption". It means different types of a lot number of wrong and unethical messages create bad impact on the behavior of consumers to adopt mobile banking. Now a day it is going to be a common practice in Pakistan different unethical messages by unregistered SIMs and illegal systems regarding financial transactions are creating bad impact in the mind of people. Which are discouraging the people to adopt the mobile banking? Regulatory authorities like Pakistan Telecommunication Authority (PTA) and State Bank will have to strongly react against these illegal entities otherwise mobile banking penetration will suffer in Pakistani environment.

4.2 Regression

Regression analysis is used to check the model by knowing the impact of independent variables on dependent variable. In this research we have two independent variables like Risk and Ethics, and one dependent variable like Mobile Banking Adoption. The regression analysis showed that in this research the value of R square = 0.621, which means that the independent variables like Risk and Ethics have 62% effect on dependent variable like Mobile Banking Adoption. In ANOVA mostly F-value is considered on significant level if significant value lies among 0.01 to 0.05, then it is said the model is good, here the F-Value = 11.855 and significant value is 0.000 which shows the high level of significance. The standardized Beta shows the comparison of magnitude of the coefficients to know that which one has more effect. The independent variable Risk has negative impact on dependent variable mobile banking adaption because the standardized beta value is -0.059 which shows that mobile banking adaption is negatively affected with Risk and it also supports research hypothesis. The independent variable Ethics has very low impact on our dependent variable mobile banking adaption because the standardized beta value is 0.018 which shows that mobile banking adaption is very less effected with Ethics means ethics has 1% effect on mobile banking adoption. As the research hypothesis was "Ethics has negative impact on adoption of mobile banking" same it has been proved in this research.

5 Conclusion

The proposed model was developed after a very extensive literature review. The research results showed that ethics and risks have –ve correlation, which means that different types of unethical messages and financial, psychological and security risks discourage the users in Pakistan to adopt mobile banking. The regression analysis showed that the model is appropriate and suitable for research. The risk and ethic has low impact.

Mobile banking in Pakistan is in its growing stages, for this growth there is main role of telecomm services providers' companies. The wireless communication services provider companies must take attention of these potential customers and must remove all the barriers and promote the factors which are helpful for the customers. The companies must value these customers which will actually decide the future market structure.

For maximum penetration of mobile banking all the stakeholders such as banks, retailers and other financial institutions must collectively drive the telecomm services provider companies in order to enhance service network and took market edge by potential customers. Banks are required to win the confidence of customer by providing different services like as credit card operations, transactions on the spot, bill payments, stock trading and foreign exchange on mobile with convenience, security, timeliness and reliability (Zheng and Chen, 2003). For operational efficiencies banks must create synergy between telecomm services providers, social media merchants, mobile device manufacturers, software developers and other all stakeholders (Nagai and wang, 2007).

Mobile banking players must focus on conformation, accuracy and monitoring tools in order to win the confidence of customers and break all the global and political hurdles in order to achieve the efficient, well regulated open architecture.

6 Limitations

As the objectives of the research were to know the impact of Risk and Ethics on Adoption of Mobile Banking in Pakistan in the current situation. There may be the following some limitations of the research.

1. The survey was based on limited demographic. Hence only Age, Gender and Qualification may not give the appropriate research results.
2. The perception and behavior of consumers varies time to time, the data collection may be through the field study, focus group interview and interview of all stakeholders instead of only questionnaire survey.
3. The other limitation of current research may be the data was not collected geographically. The data from only two cities cannot provide accurate information.
4. This research was only focused on the assessment of intention and perception of consumers rather than the actual behavioral intention towards adoption of mobile banking.
5. The research results may vary if the sample is increased or some other factors are added.

7 Recommendations

After result analysis, discussion and completion of this research few recommendations are given for further researchers and related organizations and especially for adoption of mobile banking of in Pakistan with research factors like Risk and Ethics. Make sure that every country has its own banking environment culture, ethics etc.

1. There are different perceptions of people according to country and nation wise regarding the adoption mobile banking. In Asia account based banking is used as compared to USA and France. In both regions the perception and social system of people are different about mobile banking. It is recommended for successful adoption of mobile; first understand the local environment of the country.
2. The telecommunication infrastructure and economic condition of the country has a great role for adoption of mobile banking. In Pakistan telecomm services are improving continuously and IT sectors is progressing rapidly. So companies and banks must create technically compatibilities and shift to 3G which is going to launch.
3. As the technology is growing same the companies must care about ease of use, usefulness. The customers may use having very low knowledge and education.
4. In order to get more accurate results the research area must be expanded both demographically and geographically.

There is the great role of regulatory authorities to play their important role to reduce risks and unethical way of business.

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