

The Impact of Influencing Factors on Adoption of Mobile Banking in Pakistan

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Abstract: The main intention of this research is to further more investigate the impact of Innovation, Risk and Ethics on adoption of mobile banking, as a research gap has been examined in the literature reviewed that the mobile banking adoption behavior of customers regarding these factors has not been discussed before. The targeted population for the research is the mobile user and nonuser, students of the public and private universities. The research is based on primary data for this purpose the questionnaires in 500 quantities were circulated. The correlation and regression analysis was made by using the SPSS software. The results of this research showed that there is insignificant relationship of Ethics with mobile banking adoption while Innovation and Risk have significant relationship with adoption of mobile banking. The regression analysis showed that the model is fit to predict research objectives. Keeping in mind that Ethic has negative impact on mobile banking adoption, the policy makers and managers can use the results of this research to improve economic and financial position of their institutions.

Key words: Innovation, Ethic, Risk, Telecom Sector, Mobile Banking

1. Introduction

Since the past decay, as the technology has rapidly advanced, same the banking operations and services have taken a new shift. The upcoming new most advanced technologies have created and changed the demand of customers, competitiveness and global trends of commerce. As the result of innovations in technologies, the banking services have been developed and changed the commercial and business environment. In present scenario, in order to satisfy and maintain customer relation the banks have vied each other [1]. Due to evolutionary and rapid changes the banks have also adopted new strategies. Worldwide and generally, Europe has maintained its leadership in the use of new technologies and online banking [2].It has been seen a notable advancement

in efficiencies of banking operations and reduction in staff, it is because of information technology, since 1960s and 70s. This was resulted in the shape of ease for customer and lowering operational cost. The use of internet banking, wire transfer and credit cards have shrunk the conventional valet. The banks have changed the strategies as a consequence due to evolutionary changes. The changes in social and demographic trends, regulatory requirements, customer preference, competition and technology have regularly undergone the banking sector [3]

Mobile Commerce defines that any transaction, involving the transfer of rights or ownership to use services and goods, which is done by using the mobile as computer mediated networks with internet

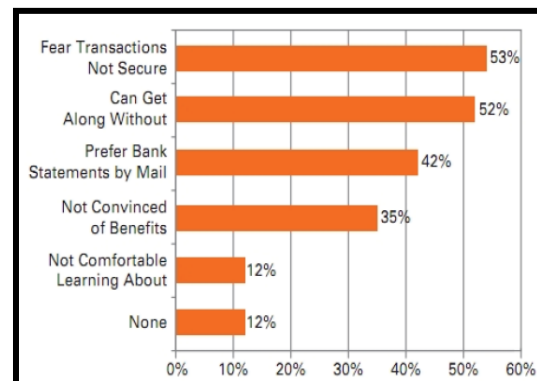
cloud via electronic device [4]. There are many different types of services and facilities which are provided by mobile banking like as time liberty, customer swiftness and expediency, along with different types of cost savings. Mobile banking provides the enlarge diffusion of market by different mobile services [5]. The evolution of different types of banking services till under banked and unbanked population is the great opportunity given by the mobile phones [6]. At the same time, banks should prepare to defend their franchises from the threats of not only financial institutions, but also from mobile carriers and other nonbank competitors, want to provide the facility to consumers to conduct financial transactions wherever they want and their mobile devices are [7].

Now a day the smart phone has become very preferred device from several large numbers of consumers from the past several years because of giving consumers more options as compared to ATMs or internet banking. Smart phone permits the consumers to send and receive e-mail, browse the webs, text messages and perform lot of other daily affairs by downloading low-cost software or free applications. The number of smart phones sold in the United State was more than 60%, from 26million in 2008 to 42 million in 2010. The remaining 25 million consumers are hoped to purchase smart phones by 2012, then the total number of units in use will up to 50% or 67 million, of the market share [7].

1.2 Research gap

To achieve the successful aims and sustain in business, by producing quality products and services, among several factors the Information System factor is the most important one. In the world lot of studies has been made in the recent years to find out the required factors that integrate the

information system into business. These researches provided a list of factors that influence the human behavior to use the new technology [8]. As from last few recent years IT, Telecom and Mobile technology sectors in developing countries have made a great progress, especially in the field of wireless broad band and wireless internet. The number of mobile users has been seen rising on daily basis and the private and public banks are rapidly and very vastly providing on-line banking facilities, especially the facility of mobile baking. As the mobile banking is in its nascent stages and there is huge gap to be filled. As the human behavior is very complex and unpredictable, therefore it is too much difficult to know about the human behavior for adoption of new technology like the mobile banking. So it is deem necessary to check the impact of factors like innovation, risk and ethics in economically and technologically developing countries on adoption of mobile baking.



1.3 Research importance

Figure 1: Factor affecting the adoption of mobile banking [10]

The results of this research will beneficial for banking sector and other relevant commercial organizations which are attached to the banking sector especially in economically and technologically

developing countries of the world. The customer is key of success of any business therefore customer attraction is always the focus of banking sector. The findings and recommendation of this research will also help to analyze, revise and restructure their different business strategies to capture the maximum potential customers. The results may be used by future researchers and related industries to understand the customer behavior towards adoption of mobile banking.

1.4 Objectives

This research aims to find out the reasons that have great impact on adoption of mobile banking.

1.4.1 Specific Aims

- To develop the theoretical frame work from literature reviewed
- To find out the role of ethics on adoption of mobile banking.
- To find out the perceived risk will be barrier to adoption of mobile banking.
- To find out the influence of technological innovation on adoption of mobile banking.

2. Literature review

2.1 Mobile Banking Adoption

The adoption of mobile banking has become popular in academics during few years ago; the researchers are focusing to investigate the factors which influence the customers for adoption. The behavior is explained as the positive or negative feeling of individual's towards performing the specific behavior [9]. The thinking of an individual regarding the subjective norm considered as the thinking

The above given figure is drawn after a survey made by Verisign explained that there are lots of different types of factors that are very helpful or threat for adoption of mobile banking in Newzeland. It has been

noted that in Newzeland 53% users don't like to adopt mobile banking services due to very unsecure transaction and 42% users want the banking transactions through e-mail [10]. [11] Proposed that adoption is the process of decision to make the full use of new innovation. In this research we are investigating the factors that influence the adoption of mobile banking.

2.2 Innovations

An idea, material, which is known or perceived as a new one by the perspective unit of the adoption is called innovation [12]. An innovation extent to which; the potential users find it a new product [13]. As making comparison with traditional banking system, that tedious in authentication and verification methods are required to be visited by the bank personally. This method not only consumes the time of the banking customer but also the services providers ultimately lead to cost complexity which also reduces the profitability. The technological innovations have reduced the requirement of staff at any branch, also reduced the salaries given to them. The use of emerging technology has reduced the firms' investments as the requirement of office and other utilities have been reduced. Actually in the offices the auto working computers have taken the place of staff and saved the expenses of salaries [14]. For customers authentication as mobile banking provides the entity authentication which means that the customer communication is with real banking and the sense of complete safety [11]. The higher level of satisfaction of customer can be achieved through the higher level of especially technological innovations. The Usage barrier of innovations becomes very strong when there is incompatibility between innovation and consumers' existing habits and the workflow. The usability which contains both the complexity and easiness of an innovation

related to the technology acceptance model (TAM) [15]. Physical risk can be harm to customers that may be inherent in the innovations [15]. After the deep study of different literature it is hypothesized that:

Hypothesis 1: Innovation has positive effect for adoption of mobile banking.

2.3 Ethics

The transactions of money through mobile devices is still in its growing age, but the mobile banking institutions not yet worked on very 'critical ethical and moral issues. If it is not properly looked into, this issue will contribute it's a specific role to conduct of unethical industry [16]. Each organization has written ethical codes, different sets of operating methods and the industry principles [17]. The transfer of different types of fund through mobile is in its early stages and mobile operators introducing day to day new advanced technologies, but from banking side no work has been done for this very ethical and moral issue, otherwise it will contribute to unethical conduct in business [16]. The life of Kenyans and East African has been changed by the use of emerging mobile technology, but no any care has been taken regarding the ethical issues by the industry. The industry must represent the written code of conduct which is acceptable by general public [18]. All these ethical issues are greatly related to security threats from online hackers, frauds, money laundering and from drug dealers and unethical conduct of some of the industry players [19]. Ethical issue is one among the lots of issues which have made the researchers compel to do the research [20].

To know the attitude of customers towards mobile banking, [21] suggested that confidentiality and security were expressed as the perceived risk and detected that these are the most significant factors which are hurdle in adoption of mobile banking. After

a research on ethic [22] suggested that the confidentiality and privacy are two main important dimensions for the construct of perceived credibility. There are many dimensions of culture; the uncertainty avoidance factor plays a regulatory role for consumer trust [23]. The uncertainty avoidance defines that society is rules-oriented; the consumers are lack of innovation, ambiguous situation is low, the tolerance level about uncertainty of the new technology is very low. While in low uncertainty avoidance, the people have a bit high tolerance about uncertainty, easily accept new changes and ideas, they very easily are willing to take risks [24].

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

2.4 Risk

The different types of expectations by customer that customer suffer of loss in desired outcomes can be define as risk [25]. The possibility of risk of fraud and illegal transactions through mobile banking is always of the important concern of both consumer and bank [25]. There are lots of risks associated to consumers and banks related to mobile banking, e.g. community risk, time risk, financial risk, service performance risk, psychological risk and physical risk [26].

As compared to traditional banking, there is high risk in mobile banking; because all the transactions are done through wireless network which create the sense of risk in mind of consumer like as hacking might cause personal data of someone that all most many people who really matter to the individual thinking that either he should not or should perform the behavior in question [9].

The tradition risks are considered as psychological barriers these psychological barriers are caused by the conflict with consumers' beliefs [27]. The academic

investigation told that the adoption of mobile banking from customer side starts from theories of psychological and sociological [28]. While [29] in a research regarding the risk told that risk is not a product it is only the perception of human. This perception sets the mind of consumer to adopt mobile banking. As the banking transactions have become the important need of life same the risks of loss of money could hamper the financial institutions. It has been noted that from lots of financial risks cost is also a main obstacle in adoption of mobile banking [30]

Hypothesis 3: Risk has negative effect towards adoption of mobile banking.

2.5 Proposed Research Model

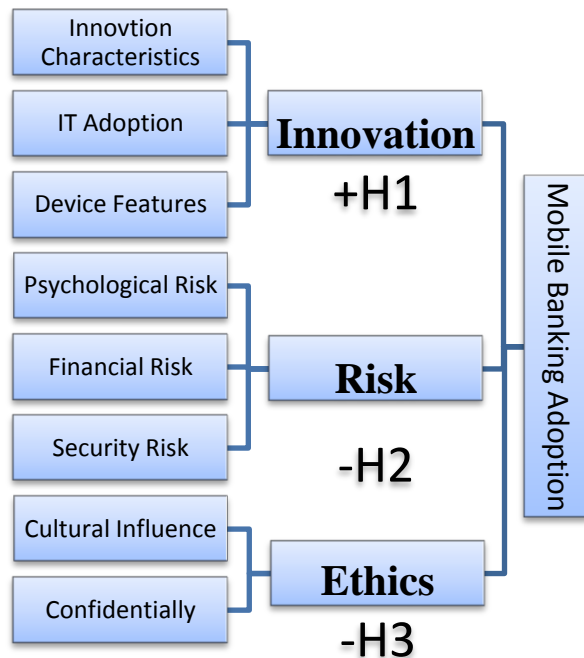


Figure. 1. Proposed research Model

Theoretical frame work or proposed research model shows the different dimensions, independent variables and dependent variable. Actually it describes the relationship between independent variables and dependent variable. The above given model shows that Risk and Ethic has negative relation with adoption of mobile banking while the innovation has positive.

3. Research Methodology

3.1 Population

The Population for this particular research was consisted of the students of private and public universities of Pothohar region (all the District and tehsils of Rawalpindi/Islamabad) because Rawalpindi and Islamabad are two twin cities and having international level universities which are providing very high standard study facilities. For the study purpose, lots of students come from all over the Pakistan. These all students have great concern with banking affairs. It is very easy for researcher to easily and accurately distribute and collect data from the students of private/public sector universities of Rawalpindi and Islamabad.

3.2 Sample

Sample size for this research was 500 students. The respondents were Bachelor, Master and M.Phil. students. The random sampling technique was applied in the research. The researcher provided the equal chance for each student to take equally participation in the survey. This technique made our research more important and so it increased the chance of acceptance and correctness.

3.3 Source of Data

The data used for this research was the primary data which was collected for this research. After the deep study of literature a questioner was developed and was send to the respondents via e-mail, through friends and on the spot filling. A likert scale in front of each question was developed to get the appropriate results. This scale ranges from 1 to 5, as 1 for strongly agree, 2 for agree, three for not agree nor disagree, 4 for disagree and 5 for strongly disagree.

3.4 Data Collection:

During the process of on spot filling and over all we motivated every student to involve in the survey and provide their unbiased and accurate responses. After receiving the responses from the respondent of the two hundred questionnaires, one hundred and seventy two were suitable and the remaining 28 were not filled properly

and were nor suitable for the research.

3.5 Research Rate

The properly filled questionnaires were 472 out of the total 500 questionnaires which were given to the students. The result of research rate is given in research rate table; which indicates that the responding rate was 94 %.

Table 1: Research rate

Number of Questionnaire	Number of response	Rate
500	472	94%

3.6 Reliability

Before floating the questionnaire, first of all 30 questionnaires were distributed to selected population for pilot testing which shows the reliability of the questionnaire. The value of Chronbach Alpha was 0.80, which tells that the questionnaire is quiet reliable and can be used for further survey.

3.7 Demographic Analysis

The demographic analysis shows the information regarding the socio-economic and trends and their impacts on the adoption of technology. For this research, in gender wise distribution males were 62.6% and 37.4% were females. This research is similar to a study made by [31] in which they showed that 65.6% were males and 34.4 % were females.

Table 2: Demographic analysis

Gender	Numbers	Percentage
Male	296	62.6
Female	176	37.4
Age		
18-25	199	42.1
25-30	140	29.6
30-35	133	28.3
Qualification		
Bachelor	143	30.3
Master	129	27.3
MS/M.PHIL	200	42.4

In this research most of the respondents belong to age group of 18-25 years which is 42.1% of the total respondents. The youth of universities have more craze to use the

different types of new mobile devices and wireless broad band and other communication services. As it is compared to world, in developing countries the rates of

wireless internet and mobile devices rates are very cheap; this also influences to use the mobile banking. If it is discussed according to qualification 42.4% are the students of MS/M.PHIL because higher qualification facilities are available only in big cities, especially Rawalpindi and Islamabad.

3.8 Correlation Analysis

According to a research by [32] the correlation identifies the association among two or more factors. Correlation analysis design has been selected to answer the relationship among different research factors and research questions.

Table 3: Correlations analysis

		Innovation	Ethic	Risk	Mobile Banking adoption
Innovation	Pearson correlation Sig. (2-tailed)	1			
Ethics	Pearson Correlation Sig. (2-tailed)	0.139 0.069	1		
Risk	Pearson Correlation Sig. (2-tailed)	-.167* 0.029	.366** .000	1	
Mobile Banking Adoption	Pearson Correlation Sig. (2-tailed)	.340** 0.000	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, there are three independent variables like Innovation, 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: Innovation has positive effect on adoption of mobile banking.

As the research hypothesis was innovation impacts positively on adoption of mobile banking, same result has been given in this

research. The above correlation matrix shows that the innovation has positive significant correlation with value 0.340**, at $p = 0.000$ with the 99.9% confidence interval which means there is very minimum about 1% chance of error in result. The result provides the following interpretation "Innovation has Positive significant relationship with adoption of mobile banking".

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

Hypothesis 3: Risk has negative effect towards adoption of mobile banking.

3.9 Regression analysis of Innovation and Mobile Banking Adoption

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”

Table 4: Regression analysis of Innovation

Model	Standardized Beta	T-Value	Significant
Constant		3.233	0.001
Innovation	0.491	2.989	0.003

R = 0.470

R-Square = 0.621

F-Value = 11.855

The independent variable innovation has great impact on our dependent variable

mobile banking adaption because the standardized beta value is 0.491 which shows that mobile banking adaption is effected with innovation and the t-value is also greater than 2 which confirm that innovation affects the mobile banking adaption.

3.10 Regression analysis of Ethics and Mobile Banking Adoption

Table 6: Regression analysis of ethic

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.

3.11 Regression analysis of Risk and Mobile Banking Adoption

Table 6: Regression analysis of Risk

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.

4. Discussion

As this research was totally based on primary data which was collected through questionnaire from 472 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: Innovation has positive effect on adoption of mobile banking.

Innovation creates positive effects on consumer behavior to adopt mobile banking. In economically and technologically developing countries of the world, the wireless services and mobile devices rates are very low as compared to the world. Therefore the new technological mobile devices, mobile banking services or products are much liked here by the costumers and which are influence the customers to adopt the mobile banking.

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

The 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 that 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 will have to strongly react against these illegal entities otherwise mobile banking penetration will suffer.

Hypothesis 3: Risk has negative effect towards adoption of mobile banking.

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 are aware of different types of risks and are not frightened from these different risks. The research results also indicate that in banking sector 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.

5. Limitations

The actual aim of the research was to investigate the impact of factors like Innovation, Risk and Ethic on Adoption of Mobile Banking in developing countries. There may possibly the following limitations of this research.

1. The questionnaire survey was based on very limited demographic. The results of future research may vary because only the Gender, Age and Qualification are not the standard factors.
2. The customer trends, behaviors and perceptions vary time to time, the different methods of data collection like group interview, field study, and interview of other stakeholders instead of questionnaire survey may change the results.
3. Geographically the data was not collected from all cities of country only two cities may not provide the correct information.
4. The research was focused on only the assessment and perception of customers rather than the behavioral intention regarding the adoption of mobile banking.
5. The results of research may differ if the sample size is increased
6. The results may also vary if some other different factors are added.

8. Conclusion

The basic aim of this research was to know the impacts of factors like Innovation, Risk and Ethic on adoption of the mobile banking. The proposed research model was developed after lots of literature reviewed. The results of this research showed that Ethic has insignificant relationship with adoption of mobile banking and other

factors like innovation and Risk showed the significant relation with mobile banking adoption. The research results indicated that Ethic is main hurdle in mobile banking, the managers must care about, the emerging technologies and different appropriate most advanced customer service like as easy in use and usefulness have great effect on adoption. Mobile banking in economically developing countries is penetrating due to Innovations and advanced telecomm services provided by different operators. The wireless internet and other communication services providing companies must pay attention about these very potential customers. The telecomm operators must eliminate the barriers and promote those factors which are influencing and helpful for the customers. For the full penetration of mobile banking in the country all the related stakeholders like as banks, nonbank institutions, retailers and other related financial institutions should collectively drive these telecomm companies in order to increase service network. This is the only way to took market shares by the potential customers.

6. Recommendations

After the analysis of research results and discussions few recommendations are advised for further future researchers, other related organizations and especially for those researcher using the factors of this research for adoption of mobile banking in economically and technologically developing countries make sure that banking culture and environment vary from country to country.

1. The perception and behavior of people vary according to economic, cultural value of country, so these factors have great impact on adoption of mobile banking. In case of Asia the banking system is account based as compared to France and USA. In both countries the social, technological environment and perception of people are quite different about the mobile banking adoption. So it is recommended that first understand the social system, economic condition and cultural system for the successful adoption of mobile banking.
2. There is a significant role of telecommunication infrastructure in the country for the adoption of the mobile banking services. With the improvement of technology the companies must pay attention towards easy operating and usefulness. Even the customers having very low standard knowledge and education can operate easily.
3. To get more correct results the research area can be expanded both geographically and demographically.
4. There is very important and great role of regulatory authorities to reduce risks and minimize the unethical way of doing business.

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