Relationship between Customer Satisfaction and Mobile Banking Adoption in Pakistan

Zohra Saleem and Kashif Rashid

Abstract—**Mobile banking has marked itself as an emerging technology adopted by banks around the globe. The purpose of this research is to identify the key factors of mobile technology adoption which influence customer satisfaction in Pakistan. Questionnaires are used to conduct data collection and then analyzed using statistical techniques: regression analysis, correlation and factor analysis. The findings show that customer's concerns about security, authenticity and reliability of the technology are of significance. The results imply that firms should focus upon IT application, innovative services, security, customer trust and risk as these are the key indicators of technology adoption.**

Index Terms—**Customer satisfaction, mobile banking, strategic endorsement, technological innovation.**

I. INTRODUCTION

Today, financial sector firms are competing to increase their profit share in the market. Among these firms, banks have radically shifted from traditional banking to branchless mode of banking. Adoption of latest technology has enabled banks to extend their customer base, where electronic banking has proved to be the chief advancement. Mobile banking can be categorized as the latest advancement in electronic banking, which has widened customers' access to bank accounts through wireless channels. Mobile banking is a financial service where the bank customers perform balance inquiry, credit transfer, and other businesses according to instruction sent through the mobile phone [1]. From customers' perspective adopting mobile banking services benefit in terms of convenience to perform banking transactions anytime and anywhere, with ease to use. Security is ensured, as banking transactions are encrypted and password-protected [2].

Pakistan has a successfully growing economy as its telecommunication industry has advanced tremendously in the recent years. Pakistan's mobile technology, which had started to grow strongly over the last few years, rocketed to 95 million subscribers by June 2009 and is gearing up for further growth. The mobile population has been increasing at a remarkable rate 58% with six mobile companies operating in Pakistan, as reported by [3]. People belonging to all income groups are using this technology as a result of foreign investment in Pakistan and reduced telecommunication rates. The encouraging prospect of mobile usage has led foreign banks of Pakistan to provide mobile banking services to customers in the country. After the multinational banks, numerous local banks have intended to initiate this service for their customers. State Bank has issued orders to these banks to facilitate poor people, especially the residents of earthquake-affected areas

[4]. The last 4-5 years have proved to be fruitful, as customers have shown interest towards technology usage.

The literature review suggests that there exists a gap in the analysis of new technology adoption in the area of e-commerce in Pakistani banks. As customers are yet novice to the new technology so there is a lot more for banks to exploit before offering the advance features of this technology. The study is significant because of the need for research on mobile banking and the impact of technology adoption on customer satisfaction. Especially in Pakistan mobile banking is a new area and there exists a need to analyze the critical aspects of technology adoption. Furthermore, customer satisfaction has not been studied specifically for banking sector firms with respect to technology adoption. The study is significant at this initial stage when State Bank of Pakistan has also released orders to all the banks to adopt the technology. Drawing on the relevant literature and empirical implications of the study, the author proposes the research question as follows: What are the dimension/factors affecting the adoption of mobile banking to create customer satisfaction in Pakistan?

Based on the research question the study aims at investigating the dimensions of technology adoption that influence customer satisfaction of financial institutions in Pakistan. According to [5]-[9] technology adoption is dependent upon numerous factors. The dimensions considered for the current study are organizational factor, technological factor, strategic factor, functional factor and economic factor based on the Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB). The study intends to identify which one among these factors perceives significance with respect to customer satisfaction.

II. LITERATURE REVIEW

Banking industry is driven by the technological innovation, market uncertainty and competition. There has been a rapid shift from traditional banking to electronic banking. Competitive banks make significant investments in adopting new technology to align business strategies, enable innovative functional operations and provide extended customer services. The term mobile "refers to applications, which are designed for users on the move" [10]. Mobile device is commonly known as cell phone and users commonly use it for communication and as a wireless delivery channel. Mobile banking is also known as M-Banking or m-banking. According to [1] m-banking is defined as "a form of banking transaction carried out via a mobile phone". Moreover, it is defined as a "type of execution of financial services in the course of which - within an electronic procedure- the customer uses mobile communication techniques in conjunction with mobile

devices" [11]. The technologies generally used for mobile banking are Interactive Voice Response (IVR), Standalone Mobile Application Clients, Short Messaging Service (SMS) and Wireless Application Protocol (WAP) [12].

A. Human-Technology Adoption Model

The conceptual framework for the research is incorporated from the research models used in the past. This framework is designed to study the adoption of technology and behavioral intention of users. As proposed by [13] the Technology Acceptance Model depicts that perceived usefulness and perceived ease of use determines an individuals' intention to use a system. Adoption of a technology in customer's point of view is the ease and usefulness he considers to avail from it. Similarly, Task-technology Fit model "focuses on the match between user task needs and the available functionality of the IT" [14]. Technology innovation bridges the gap between customer's expectation and their perceived experience of performance. The technology advancement increases the usefulness which leads to higher customer satisfaction. Reference [15] proposed that Delone and McLean IS success model is a "framework for IS success measures that distinguishes system quality, information quality, user satisfaction, use, individual impact and organizational impact" [16]. Furthermore, the theory of planned behavior is a theory about the link between attitudes and behavior of customer. The model assumes behavioral intention to use as customer satisfaction determined by usefulness, risk and trust.

Based on the literature related to, Theory of Planned Behavior (TPB) [6] and Innovation Diffusion Theory [7], E-banking Services Evaluation Criteria [8], Task-technology Fit model Technology Acceptance Model (TAM) [13], Delone and McLean IS success model (DMISM) [15], the current study extends its applicability in context to mobile banking adoption.

B. Customer Satisfaction

Customer satisfaction measures how well a product or a service supplied by a firm meets customer expectation. According to [2] "ease of use, security, low transaction costs, and wide applicability of the solutions increase perceived customer value and should be managed by mobile payment solution provider". Numerous researchers have investigated perceived usefulness and perceived ease of use as a valid construct to measure customer satisfaction level [1], [6], and [17]. Mobile banking is adapted by the banks as means to provide customers swift and easy access to their bank accounts. Customers adopt a technology when they find it easy to understand and implement. According to [1] and [18] perceived usefulness has a positive effect on the behavioral intention to use mobile banking.

C. Hypothesis Development

Review of the previous studies has suggested the formulation of theoretical foundation for the current study. The study examines the key dimensions of TAM and TPB model, which are following factors of mobile banking adoption.

D. Organizational Factor

Competitive organizations actively adapt to their changing environments. With the passage of time and advent of technology, the size of organization's business must increase to gain recognition and profit. Organization's size "refers to capacity, number of personnel, outputs (customers, sales), resources (wealth)" as suggested by [19]. The organizational structure of a firm plays a pivotal role in new technology service adoption. Centralized decision making negatively affects the adoption of new technology while, decentralized decision making helps to come up with more creative and innovative ideas [8]. Mobile banking is in the growing phase of the organizational life cycle. Banks follow different programs related to organizational development like employee training and development and hiring IT professionals, and competent staff is recognized by their expertise and qualification [20].

Firms with proficient organizational structure establish its economical base to adopt a technology. According to [21] organizational factor is concerned with the organizational structure, the firm's culture and management style as well as the flow of information. The criteria mentioned above form major portion of the organizational factor that immensely affects the organization's services and its customers. According to [22] organizational culture is the social tie in which the employees operate, and share ideas with each other. This social connection builds up the idea that the departments or units operating in a firm are the core foundations which promote advancement. Financial institutes like banks need to create their unique identity in the mind of customers because they offer almost the same kind of services. The display of corporate image in the market requires robust organizational policies and structure. Literature suggests that in banking sector, firms need to pay major emphasis on customer satisfaction and quality of service to define the difference between their bank and competitors.

H1: Higher level of organizational flexibility associated with mobile banking adoption, leads to higher level of customer satisfaction.

E. Technological Factor

Increasing complexity of technology reduces the adoption of technology and makes it costly for the firm to implement. Higher technological innovation with reduced complexity is profitable for adoption of mobile banking as well as it increases the trust of customers on the service provider thus increasing customer satisfaction [23].

Comparatively traditional banking system incorporated tedious authentication and verification methods which required the customer to visit the bank personally. This activity consumed time of the customer as well as the service provider, increasing the cost and complexity and reducing profit. Technology innovation has reduced the requirement of staff at the branch, thus reducing the salaries given to them. The office setup required and other utilities are removed, thus saving firms investment, which is now used to establish computer infrastructure that operates automatically under the supervision of few skilled IT professionals, saving time and money [17]. Mobile banking as provides the facility of entity authentication which means "users should be sure that they are communicating with the real bank, before sending sensitive information to it; banks

should know the identity of a user before processing its transactions".

Numerous researchers have followed the theoretical construct of perceived characteristics of an innovation established by [24] which was a part of his work on diffusion theory. According to the theory relative advantage, compatibility, complexity, trialability and observability are the factors influencing adoption and diffusion of innovations. According to [24] "more positively new users perceive an innovation with regard to these five characteristics, the greater the likelihood that the innovation will be adopted". On the basis of this, he further classified the adopters into categories named innovators, early adopters, early majority, late majority and laggards [25].

H2: Higher level of technological innovation associated with mobile banking adoption, leads to higher level of customer satisfaction.

F. Strategic Factor

Customer loyalty and customer retention has importance over customer acquisition. The value of customer relationship management has become apparent in this competitive era of technological innovation. Trust is the backbone of any business [26]. The level of risk involved varies with the nature of the product offering. The security issues are involved in customer authentication and authorization through all the stages of wireless transmission [8]. Reference [27] describes ease of use, transaction security, transaction accuracy, speediness, convenience, time utility, provision of different personal services, social desirability, usefulness, economic benefits, and user involvement as psychological factors associated with banking channel adoption.

Successful strategy in terms of customer retention or enhancement ultimately leads to the profitability. A stream of research has argued that in banking sector, the strategic focus of banks is to remain competitive in order to retain as many customers as possible [23] and [28]. They further added that retention of existing customers is more economical compared to acquiring the new ones. Reference [29] argues that "long-term customers also take little time of the company and are less sensitive to price changes". Thus, customer retention and customer satisfaction are the two main prospects to be catered while designing firm's strategy. Reference [21] prioritized service quality, competitive differentiation, high profit/volume, and low price or cost as market strategies.

According to [30], degree of complexity and degree of versatility in the organizational environment contributes to the confusion in decision making. Uncertainty leads to flawed decision making done by managers, which can be harmful for organization's profitability. To avoid these situations of changing circumstances, market assessment is essential. Reference [28] depict that social and technological changes have a great impact on the efficiency of banks. The technological development in the market and communication system has compelled banks to develop strategic marketing practices.

H3: Higher level of strategic endorsement associated with mobile banking adoption, leads to higher level of customer satisfaction.

G. Functional Factor

Functional aspect of service provision to customers, in banking sector, is targeted to increases their interest and attract new customers. But to retain customers, the functionality offered must be reliable and timely. Similarly, accessibility with respect to convenience is a vital issue for the customers. Moreover timely delivery of service is also crucial or else it may cause anxiety in customers and a firm may lose them. Relationship service is the key factor that adds value to the service. Service provider must take care of this issue in order to extend the adoption of mobile banking. Trust, which is a crucial factor, can be linked to customer service. Through the use of FAQ's and personnel contact to ensure reliability on the system can be created. The system must show full detail of the utility. Help material and printed material should be provided to customer. Confirmation detail is one of the functionality which broadens the aspect of trust in customers. SMS alerts cater the need to keep the customer updated with the bank transaction.

Reference [21] suggested that "quality/operations management, staff pay and promotions and staff training and evaluation" as managerial uses of customer satisfaction measurement. The evidence suggests that the functional criterion of a service has a vital impact on the customer's satisfaction level. Guidance is one of the critical features which must be provided to the customer. Help centre provides proper navigation details through the system, which enables a user to gain full benefit from the utility. Functional features like speed, interactivity, accessibility and security are the desired deliverables of customers. Furthermore, feedback and complaint management are the service demanded for proper user satisfaction. Customer inquiry service must be timely for customer satisfaction and retention.

Reference [5] suggested that functional diversification, service quality and versatility as well as efficiency of customer inquiry service as the key factors of measuring customer satisfaction. Furthermore, research shows that bank's put in their best effort to sell different products and services to customers. Today's customers desire quality products and services along value added benefits [28]. He further added that "improvement in communications efficiency, could have a significant impact on customer satisfaction and consequent behavioral intentions".

H4: Higher level of functional performance associated with mobile banking adoption, leads to higher level of customer satisfaction.

H. Economic Factor

The important driving factor towards the adoption of technology advancement is the economic boost that it has brought to the setup. The recognition of mobile banking service in m-commerce depends upon the cost effectiveness introduced to the traditional banking system. Mobile banking offers customers reduced service charges than traditional banking charges. This is an incentive offered by the banks to use the technology and to attract customers, to increase their profit margin. Adopting technology-based innovation can be costly as institutions require a complete setup of computers, network coverage and skilled workers

to start up with. But mobile technology has an advantage over other innovations as it acknowledges the existing infrastructure available in the market. Mobile network coverage provided by the telecom companies is used by the banking sector to provide their services. To cope up with the changing environment and to ensure provision of risk free technology to customers, banks invest in establishing measures to provide secure and reliable transaction of money. Investment done to ensure security must be balanced with respect to the costs, as extra costs generally increase the cost of availing a service [31]. The repercussions of mobile technology are not necessarily transformed into financial profits, but often passed to the customer in the form of reduction in prices. The study emphasizes that adoption of mobile banking enhances the performance of a bank in terms of reduction in costs, such as transaction, administration, and promotion cost [8].

Economic cost is one of the biggest concerns for any technology adoption. Numerous technological advancements fail due to high expenses and operational costs. Thus, technology having optimal expenses is launched in the market and rapidly adopted by the customers. Evaluating customer satisfaction requires certain dimensions to be considered. Level of service quality determines customer satisfaction and improved service quality has a positive outcome, but it must not exceed the expected profit margin. Therefore, creating long-term relations with customer through attention to needs, increase in service quality along with reduction in cost, leads towards improving firm's overall performance [32]. Similarly, [6] added to the same concept that "perceived financial cost will have a negative effect on the behavioral intention to use mobile banking". The argument suggests that customer satisfaction improves with reduced economic costs. Reference [33] stated customer satisfaction as the leading indicator for business profitability. He further argues that customer retention and penetration is the measure for customer satisfaction level.

H5: Higher level of economic cost associated with mobile banking adoption, leads to lower level of customer satisfaction.

III. RESEARCH METHODOLOGY

The proposed hypotheses are tested for banks as a case where mobile banking is being offered to customers for the last few years.

A. Sampling

The current study is a survey based research, using non-probability sampling technique. The sample frame is limited to three banks as these banks have been offering services to customers over a period of time which is helpful for the researcher in conducting the survey and inquire about the construct of customer satisfaction from the banks' customers who are availing these services.

Citibank N.A. and Standard Chartered Bank (Pakistan) Limited are the leading multinational banks in the country which have been offering mobile banking service for over five years. This makes them qualify to become the target sample. Amongst the local banks in the country, United

Bank Limited is the pioneer bank which had started offering its services. The branches of these banks are selected on the basis of convenience sampling.

B. Data Collection and Response Rate

The data is collected for empirical investigation in order to identify the significance of the factors that affect the adoption of mobile banking services. The questionnaire for the study is developed according to likert scaling technique. The respondents are asked to select the response for each statement in multiple item scale ranging from 'strongly agree' to 'strongly disagree'. Based on the literature review, two questionnaires are developed separately for bank employees and bank customers. The questionnaire developed for the employees is divided into two parts. Initial questions are related to the demographic attributes, followed by the questions regarding the factors of mobile banking adoption that affect customer satisfaction. These questions are designed on the basis of the operational definition of each variable which is discussed in the section of hypotheses formulation. The questionnaires are given to a sample of 230 bank employees and 230 bank customers. After a follow-up round, total of 150 usable responses were gathered from employees and 150 from customers.

C. Econometric Model

An econometric model is developed for the study in order to testify the relationship between the dependent and independent variables and to test the hypotheses relevant for the study. This is an integrated model, which is proposed on the basis of the human-technology adoption models discussed in section 2.1.

Customer satisfaction as a function of mobile banking adoption can be depicted in the form of the following equation.

$$CS = \alpha_0 + \beta_1(OF) + \beta_2(TF) + \beta_3(SF) + \beta_4(FF) - \beta_5(EF) + \varepsilon$$

where: α_0-intercept, Customer Satisfaction-CS, Organizational Factor-OF, Technological Factor-TF, Strategic Factor-SF, Functional Factor-FF, Economic Factor-EF and ε-coefficient of error term.

IV. CONCEPTUAL FRAMEWORK

The conceptual framework presented in figure 1 summarizes the relationship between dependent and independent variables that are used as the fundamental basis for the study.

The research design is quantitative. The data gathered is tabulated into two separate sheets each for bank employees and bank customers. This data is analyzed by using a statistical software package known as Statistical Package for Social Sciences (SPSS 12 version).

Hypothesis testing is performed on the basis of regression analyses. Similarly, correlation analysis is performed to check the intensity of association between the variables of the study. Finally, factor analysis is conducted to testify the patterns of relationship among the dependent variable and independent variables. The methodology used in the study is similar to the methodology adopted by [1], [6], [34] and [35].
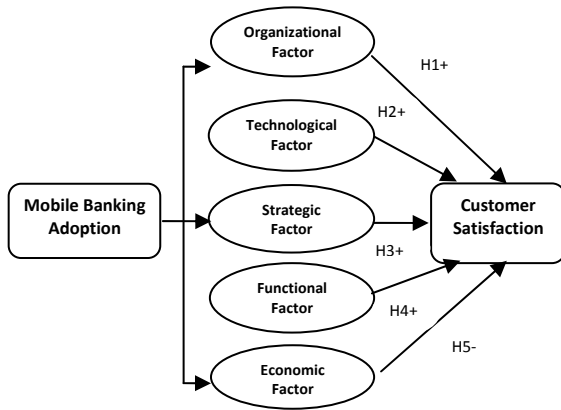
Fig. 1. Conceptual Framework.

V. RESEARCH FINDINGS

The findings are proposed on the basis of the following analyses:

A. Descriptive Statistical Analysis

Organizational factor has a mean score of 0.70 and standard deviation of 0.15. The results show the variance statistic as 0.02. The normal curve is skewed to the right with a skewness of -0.21 and kurtosis measure of -0.608. The graph shows slightly negative skewness and positively peaked curve. Strategic factor shows the highest average value that is mean score of 0.82 and standard deviation of 0.17. It has skewness of -0.41 making it skewed to the right side of the curve along with a kurtosis -1.0. The curve is flat and negatively skewed showing a variance of 0.02. Economic factor has a mean score of 0.79, standard deviation of 0.16 and variance of 0.02. The curve is skewed to the right with a skewness of -0.45 and flat with kurtosis -0.39. Customer satisfaction is the dependent variable in the research. It accounts for a mean score of 0.80 and standard deviation of 0.14. It has a variance statistic of 0.02. The curve is negatively skewed to the right with a skewness of -0.35 and peakedness of -0.58. The descriptive statistics is displayed in TABLE I below.

TABLE I: DESCRIPTIVE STATISTICAL ANALYSIS

Variable	Mean	Standard Deviation	Variance	Skewness	Kurtosis
OF	0.706	0.154	0.024	-0.213	-0.608
SF	0.823	0.169	0.029	-0.414	-1.089
EF	0.799	0.159	0.026	-0.458	-0.392
TF	0.804	0.171	0.029	-0.379	-1.052
FF	0.759	0.187	0.035	-0.470	-0.514
CS	0.804	0.142	0.020	-0.352	-0.581

CS= Customer Satisfaction, OF=Organizational Factor, TF= Technological factor, SF=Strategic Factor, FF= Functional Factor, EF=Economic Factor

B. Reliability Data Analysis

The collected data is verified for its reliability by calculating the Cronbach's Alpha. According to [36] the alpha value more than 0.5, shows that the scale can be considered reliable. According to [28], the customer satisfaction with its determinants has good internal consistency, with a cronbach's alpha coefficient as 0.60. The results show that cronbach's alpha ranges from 0.67 to

0.69 which shows that the scale is reliable. It exceeds the recommended value of 0.6 [35], demonstrating sufficient internal consistency in the scale applied to the research model.

C. Hypothesis Testing

The independent variables and the dependent variable are aggregated and tabulated in SPSS for hypothesis testing. The techniques used are as follows.

D. Factor Analysis

The research incorporates factor analysis as criteria for validity. The analysis is consistent with [34] and [36]. Confirmatory factor analysis is used for the measurement criteria as used by [35] and [37] in their studies related to mobile banking. The same method of analysis is conducted to identify the strongest underlying factor of the dependent variable customer satisfaction.

The Eigenvalues and sum of squares loadings for the factors are displayed in TABLE II below.

TABLE II: TOTAL VARIANCE EXPLAINED

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.396	39.929	39.929			
2	1.112	18.526	58.455			
3	0.931	15.513	73.968	2.396	39.929	39.929
4	0.884	14.729	88.696	1.112	18.526	58.455
5	0.361	6.023	94.720			
6	0.317	5.280	100.00			

Exaction Method: Principal Component Analysis.

The results of principal component analysis indicate that, there are two factors whose Eigenvalues exceed 1.0. The Eigenvalue of a factor represents the amount of the total variance explained by that factor. The two factors identified in this study explain 58.45% of the total variance. The first factor explained 39.92% of this variance. Similarly, the second factor explained 18.52% of the total variance. The percentage of variance combines for succeeding variables to make up 100 % variance. The research incorporates Kaiser's criterion and Cattell's scree test to extract the first two factors. According to Kaiser's criterion, factors with Eigenvalues of 1.0 and greater than 1.0 are extracted for further investigation. Two factors are identified for the factor analysis using the Eigenvalue criteria as followed by [34].

Furthermore, TABLE II shows the extracted sum of square loading for the two factors. The values are calculated on the basis of the common variance, which is smaller than the total variance, incorporating 58.45% of variance. Rotated sum of square loadings depict the distribution of the variance after varimax rotation. Varimax rotation tries to maximize the variance of each of the factors, so the total amount of variance accounted for is redistributed over the two extracted factors. The study incorporates principal component analysis with varimax rotation. This method is widely adopted as a reliable method of factor analysis [35], [37] and [38].

Factor loadings for the extracted variables are represented

in TABLE III.

TABLE III: ROTATED COMPONENT MATRIX

Variable	Factor	
	1	2
Technological Factor	**0.857**	0.035
Strategic Factor	**0.832**	0.122
Customer Satisfaction	**0.678**	0.460
Economic Factor	**0.599**	-0.161
Functional Factor	-0.079	**0.744**
Organizational Factor	0.097	**0.639**

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

Factor loadings for all the variables greater than 0.55 show acceptable level of correlation between the variables and the respective factors. According to the result, first factor, exhibited heavy loadings for four variables pertaining to the factors of mobile banking adoption. This factor consists of factor loadings for technological factor (0.857), strategic factor (0.832), customer satisfaction (0.678) and economic factor (0.599) of mobile banking adoption. This factor can be called as "Business Factor", because factors of mobile banking adoption and customer satisfaction load highly on it. Factor two, exhibits loading for two variables concerning heavily on functional factor (0.744) and organizational factor (0.639) which can be called as an "Operational Factor". Factor analysis presented a good fit between the data and the proposed model. The goodness-of-fit statistic indicates that the model is acceptable and statistically significant [34]. The Chi-square value of 5.718 indicates a good fit between the model and the data and there exists an adequate correlation among the extracted variables.

E. Correlation Analysis

Analysis of the correlation matrix indicates that organizational factor has a moderately positive relationship with customer satisfaction [r=0.203]. The positive result implies that better organizational flexibility leads to improved customer satisfaction, thus approving the acceptance of hypothesis H1.

The results also indicate that there is a strong, positive correlation between the two variables: customer satisfaction and technological factor [r=0.531]. The findings of [38] also suggested that technology advancement by the firm leads to increase in customer's ease and usage, increasing the level of satisfaction. According to the results, customer satisfaction is found to have a significant positive relationship with strategic factor [r=0.604], for the pooled data, which allows us to accept the hypothesis H3. The result supports the fact that high level of strategic enhancement in a firm results in higher levels of customer satisfaction, which is consistent with the findings of [21], [22] and [39].

The results of correlation are shown in the TABLE IV.

Furthermore, the results also show a relatively weak correlation between functional factor and customer satisfaction [r=0.177]. The variables hold a positive correlation at a significance level of 0.05. The value shows that functional enhancement of a technology has a direct impact on the level of customer satisfaction. This correlation strengthen the results of [28], accepting the hypothesis H4. There is a negative correlation between the two variables, customer satisfaction and economic factor [r=-0.105], which shows that low levels of economic cost is associated with higher levels of customer satisfaction. Mobile banking is introduced by banks as a cheap and reliable channel for service delivery to customers. The result seems to suggest that customers adopt new technology when imposed upon by lower service charges and usage cost. Thus, the hypothesis H5 is accepted, as argued by [39].

TABLE IV: CORRELATION BETWEEN FACTORS OF MOBILE BANKING ADOPTION AND CUSTOMER SATISFACTION

Factors of Mobile Banking Adoption	Pearson Correlation (r)	Significance (2-tailed)
Organizational factor	0.203(*)	0.013
Technological Factor	0.531(**)	0.000
Strategic Factor	0.604(**)	0.000
Functional Factor	0.177(*)	0.031
Economic Factor	-0.105	0.202

r is Pearson correlation coefficient
*Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed)

F. Regression Analysis

In order to test the hypothesis, the study used linear regression analysis to find out the relationship and intensity for each factor of mobile banking adoption in affecting customer satisfaction. The dependent variable and the independent variables are aggregated for data analysis and are entered for regression analysis.

The value of R squared (goodness of fit) is 0.484 or 0.49 approximately. The value of R squared shows the portion of independent variable explained by the independent variables. The score for R squared is significant at 0.0001 level, which shows that the findings are statistically robust. The co-efficient of correlation R is 0.696 or 0.70 approximately.

The regression coefficients are shown in TABLE V below.

TABLE V: COEFFICIENTS

Model	Unstandardized Coefficients		Standardized Coefficients	Significance
	B	Std. Error	Beta	
(Constant)	0.232	0.070		0.001
OF	0.106	0.056	0.115	0.061
TF	0.284	0.067	0.342	0.000
SF	0.373	0.063	0.444	0.000
FF	0.133	0.046	0.176	0.004
EF	-0.174	0.060	-0.195	0.004

CS= Customer Satisfaction, OF=Organizational Factor, TF= Technological factor, SF=Strategic Factor, FF= Functional Factor, EF=Economic Factor

The results are interpreted as follows:

Organizational factor: The first hypothesis in this study (H1) is about the impact of organizational factor on the level of customer satisfaction. The hypothesis is accepted as the results show that organizational factor has a coefficient value of 0.106 and significance of 0.061, which is consistent with the results of the study done by [18]. This leads to the acceptance of the hypothesis as there exists a positive relationship between organizational factor and customer

satisfaction.

Technological factor: The analysis result shows the coefficient value of 0.284 and significance of 0.000. The result shows a strong positive relationship of the variable with customer satisfaction. The result confirms the hypothesis (H2) that has found a significant positive relationship between technological complexities and intention to use M-Services [25].

Strategic factor: Based on the coefficient value (0.444) and significance level (0.000), it is suggested that strategic factor is the strongest predictor of customer satisfaction among the rest of the variables. Hence, hypothesis (H3) is accepted to be true. The research findings are consistent with the previous studies of [28] and [30].

Functional factor: The result shows coefficients value of 0.176. The statistics are relatively weaker than the other variables but confirm a positive relationship between the independent and dependent variable at a significance level of 0.004. The result leads to the acceptance of our hypothesis (H5) and findings in the literature [23] and [24].

Economic factor: Economic factor is found to have a negative relationship with customer satisfaction as shown by coefficient value of -0.174 with the significance level of 0.004. The results confirm the hypothesis (H5) as there exists a negative relationship between the economic factor and customer satisfaction which is consistent with the previous studies of [6], [33], [40] and [41].

Regression Equation: The result shows 0.232 as the y-intercept or constant term of the regression equation. The coefficients for the model are reported above and the model is represented below:

$$CS=0.232+0.106(OF)+0.284(TF)+0.373(SF)+0.133(FF)-0.174(EF)+\varepsilon$$

VI. CONCLUSION

The results of the study suggest that mobile banking has a bright future in Pakistan. The Pakistani government has taken steps to build up policy for the local banks to adopt the technology in the near future. Keeping in mind that "Mobile Banking" is a relatively new concept, it is emphasized that customers do not understand the technology. Therefore, it is crucial at this stage to create awareness about the usage of mobile device and familiarize people with its benefits. A key finding of the research is that mobile banking is a critical service in banking industry. Therefore, it can be concluded that it is vital for the banking industry that mobile banking service is adopted by the account holders. The findings also indicate that mobile banking adoption requires technologically efficient as well as cheap, reliable and secure technology development. In order to ensure that customers adopt the technology it must be efficient and quick as well as easy to understand and use. The study supports the hypothesis that strategic factor has the most significant and strong impact on customer satisfaction. Relative advantage of technology and the degree of service expansion significantly contribute to the factors for the variance. The practical implication of mobile banking depicts that there is a positive relationship between organizational factor and customer satisfaction. Results

show a weak positive relationship between customer satisfaction and technical infrastructure. Furthermore, the type of decision making is the most contributing factor in bringing change in the dependent variable. The study supports the research finding that there is a negative relationship between economic factor which is associated with the usage of mobile banking and customer satisfaction. Cost of doing business and market risk being the most important measures of economic factor which affects the customer satisfaction.

VII. IMPLICATIONS OF THE STUDY

According to the research findings, certain areas are identified as the most critical while adopting a new technology. These identified areas must be thoroughly considered by the banks, especially in Pakistani financial environment to increase their customer base.

- Reduction of risk related to day-to-day transactions performed through mobile device enables customers to build up trust in the banking services being offered.
- The degree of service expansion done by the bank periodically motivates customers to adopt the technology, as it offers versatility in its offerings.
- Sophisticated technical infrastructure should be developed in order to ensure reliable and timely provision of services to customers.

VIII. FUTURE RECOMMENDATIONS

Mobile banking service is relatively unexplored technology in Pakistani financial institutions, mainly in banks. The author proposes the following recommendations:

- Further research should be conducted in this area to explore the profitability associated with the technology.
- There is a need to explore more independent variables that can have an impact on customer satisfaction.

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Zohra Saleem is Lecturer at Management Sciences Department COMSATS IIT, Abbottabad Pakistan.

Kashif Rashid is Associate Professor at Management Sciences Department COMSATS IIT, Abbottabad Pakistan.