

# Bangladeshi mobile banking service quality and customer satisfaction and loyalty

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**Abstract:** The rapid increase in the number of mobile phone users and the growing popularity of mobile banking services in Bangladesh had a twofold outcome: it allowed financial institutions to tap into the areas of the market previously untouched by banking services, but it also brought along for their marketers the challenges of customer retention. The existent literature names the perceived service quality as a powerful antecedent of customer satisfaction and retention. But, as the field is relatively new in Bangladesh, the major challenges for marketers are to understand what customers perceive as quality dimensions in mobile banking services, and what impact these dimensions have on customer satisfaction and retention. Although the literature on service quality is abundant, very little research has been conducted on the evaluation of the quality of services delivered through non-branch banking. This study is an attempt to explore the perceived service quality dimensions and their impact on customer satisfaction. Adopting from the existing literature a set of dimensions of quality and using a self-administered questionnaire survey and a confirmatory factor analysis, we confirm that reliability and responsiveness, assurance and security, convenience of location, and efficiency and easiness to operate are dimensions of perceived quality for mobile banking services in the context of Bangladesh. In addition, the regression analysis reported that service quality as a whole is a strong antecedent of customer satisfaction, but only three dimensions have a positive influence on satisfaction (reliability and responsiveness, efficiency and convenience) and two of them on customer retention (reliability and efficiency). In spite of the study's limitations, the results work as steppingstones for future research in this area.

**Keywords:** mobile technology, mobile banking, service quality, customer satisfaction, loyalty.

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## Introduction

The rapid proliferation of information technology and the progressive adoption of technology in financial services have given banking services a new momentum in the 21<sup>st</sup> century. Being influenced by the high rate of technological penetration among customers and by the impetus to accommodate more and more people under the framework of formal banking services, the banking

industry in Bangladesh has inevitably changed itself by adapting information technology for the provision of quick and quality consumer services in the form of online, e-banking, ATM services etc. But the majority of population is economically marginal and lives in villages, and bringing them inside the branch banking systems is both expensive and technologically incompatible. Bankers are considering non-branch banking, known as mobile banking, as the perfect platform to take financial services to the country's largely unbanked population in an efficient and low-cost manner. Uttam Nayak, the group country manager of VISA for India and South Asia, recently commented that mobile banking is going to be significantly important for financial inclusion in Bangladesh (Fazrul, 2014).

Mobile banking refers to a system that enables bank customers to access their accounts and general information on bank products and services through mobile devices. Because of its different nature, consumers in the financial service market do not perceive mobile banking as alternative to branch banking except in the case of quick money transfers. Educating consumers on the benefits of mobile banking as well as improving the quality of the services are the key to success in capitalizing the potential opportunities of this sector. Understanding service quality, which is the antecedent of customer satisfaction, as well the rate of market penetration of the mobile banking services can help marketers devise effective marketing strategies for capturing potential opportunities.

Service quality has been defined in the literature as the customers overall assessment of a service. Zeithaml (1996) said that only the customers judge the quality, all the other judgments being irrelevant. Lewis and Booms (1983) found that practitioners define service quality in terms of key dimensions that customers use while evaluating the services. Thus, service quality is sensitive to culture, situation, time, and industry. Seth et al. (2005), in a review of various service quality models, revealed that the service quality outcome and measurement is primarily dependent on the type of service setting, situation, time and need. In addition, even the customer's expectations towards particular services are changing with respect to factors, such as time, increase in the number of encounters with a particular service, competitive environment etc. The alternative banking service delivery channel is relatively new in Bangladesh and no significant study on identifying the service quality dimensions is currently found in the literature. Therefore, the present study is an attempt to enrich the current literature.

### **Mobile banking in Bangladesh**

An appropriate banking environment is considered a key pillar as well as an enabler of economic growth (Koivu, 2002). Mobile banking is considered as an alternative and innovative method to access banking services via a channel through which the customer interacts and completes bank related transactions such as checking the balance, checking the account status, transferring money and selling stocks (Kim et al., 2009; Luo et al., 2010). But no clear guidelines are given in the literature regarding the appropriateness and quality environment

for mobile banking explicitly in the Bangladeshi context. This study is an effort in this direction.

Bangladesh is a fast growing economy with young demographics. The mobile phone penetration rate in this country is one of the highest in Asia after China and India. The number of subscribers has reached more than 100 million in 2013 out of the 160 million representing the total population. Affordable call rates, wide connectivity, and available internet connection through mobile phone have made this device an inevitable friend of Bangladeshi people. Banking services through mobile phones represent a recent addition of the financial service delivery system. Dutch Bangla Bank Ltd (DBBL), one of the leading commercial banks in Bangladesh was the first mover as it launched this service on March 31, 2011. By 2013, at least 15 other commercial banks have started offering this service, and by the end of the year there were 13.2 million accounts of registered users doing monthly transaction of over TK66 billion through 182,000 agents across the country (pi Strategy Consulting, 2014).

Historically, there has been a dearth of consumer behavior studies in general and in the service industry in particular from the Bangladeshi perspective. The recent spread of consumer culture has made young researchers interested to study the consumer behavior in depth. Deb et al. (2011) have studied the dimensions affecting the adoption of mobile banking in Bangladesh and found that the handset operate ability, convenience, and security are the prime influencing factors, while reliability, cost, confidentiality, network procedure, and knowledge also have a significant influence. Kabir (2013) worked on consumers' perceived risk in mobile banking and reported that perceived ease of use, relative cost and time advantages are positive factors, while performance risks, security/ privacy risks, time risks, social risks, and financial risks negatively affect the adoption of mobile banking. In regards to customer satisfaction, a study performed by Parvin (2013) in 2011 showed that most of the users of mobile banking would like banks to extend the services offered through this channel and that the level of satisfaction was very high among the population of users, almost half of them describing themselves as very satisfied while only 8.3% stating that they are very disappointed. A different study done by Shohag (2013) on the customers' satisfaction with mcash, a mobile banking service offered by the Islami Bank of Bangladesh, found that users had average levels of satisfaction and that they required the extension of the network of banking agents and the availability of the service through more mobile telephony providers such as Grameenphone and Banglalink. The present study completes previous ones by exploring the dimensions of service quality and their influence on customer satisfaction and retention in the Bangladeshi context.

### **Service quality dimensions**

Research concerning the measurement of service quality and customer satisfaction is prevalent in the marketing literature (Cronin and Taylor, 1992; Oliver, 1993; Parasuraman et al., 1988, 1994). Quality has been considered one of

the critical antecedents of satisfaction (Baker and Crompton, 2000; Caruana et al., 2000; Cronin and Taylor, 1992), perceived value (Baker et al., 2002; Fornell et al., 1996; Petrick and Backman, 2002) and a good predictor of repurchase intentions (Baker and Crompton, 2000; Getty and Thompson, 1994). Service quality has been defined in the literature as an overall assessment of the service performed by the customers. Practitioners define service quality in terms of the key dimensions that customers use while evaluating the services (Lewis and Booms, 1983). Grönroos (1984) identified three components of service quality, namely: technical quality, functional quality and image.

One of the most extensively used measures of service quality is SERVQUAL (Cronin and Taylor, 1992; Oh, 1999). The SERVQUAL questionnaire was developed by Parasuraman and Zeithaml (1988) and conceptualizes service quality as the difference between consumers' expectations and their assessments of service performance. Thus, if the service performance meets expectations, the expectation is confirmed. Similarly, Lehtinen and Lehtinen (1991) offered another measurement scale with three dimensions of service quality – physical, interactive and corporate – by conducting a survey of service quality in the public transport sector. Even though the SERVQUAL questionnaire has been extensively used to measure service quality, many researchers have criticized its applicability (Oh, 1999). Research has shown that the SERVQUAL conceptualization of service quality (Cronin and Taylor, 1992) and the relevance of the disconfirmation of expectations as the basis for measuring service quality are inadequate (Carman, 1990). Cronin and Taylor (1992) said that service quality should be conceptualized and measured as an attitude. They empirically compared the performance-only model (SERVPERF) to SERVQUAL in four industries (banking, pest control, dry cleaning, and fast food) and by reducing the number of items from 44 to 22, they found that the structural model of SERVPERF was superior in all four industries.

Recent conceptualizations suggest alternative measures of service quality are more appropriate than utilizing SERVQUAL (Baker and Crompton, 2000; Oh, 1999). Petrick and Backman's (2002) SERV-PERVAL scale measures quality based on Parasuraman and Zeithaml's (1988) definition stating that quality is a consumer's judgment about a product's or service's overall excellence or superiority. Utilizing this definition, the resultant items that measure quality are related to the reliability of the service. Despite considerable work undertaken in the area, there is no consensus yet as to which one of the measurement scales is robust enough for measuring and comparing service quality across cultures and industries.

Given that reliability has consistently been found to be the most important dimension of quality for banking services (Asubontegn et al., 1996; Backman and Veldkamp, 1995; Howat et al., 1995; Knutson et al., 1995; Ostrowski et al., 1994) and that performance-only measures have been found to be superior to expectation disconfirmation measures (Petrick and Backman, 2002), the current study operationalizes quality by using the quality dimensions adapted from Cronin et al. (2000) and Gallarza and Saura (2006) which are consistent with the SERVQUAL dimensions.

**Research methodology**

Parasuraman et al. (2005) developed a multi-item scale for the assessment of electronic service quality, which they named E-S-QUAL. The four dimensions of E-S-QUAL are efficiency, fulfillment, system availability and privacy. Service recovery is also an important factor affecting the service quality perception of customers in technology-based services. Hence, Parasuraman et al. (2005) also developed a scale for electronic service recovery quality (E-RecS-QUAL), which consists of three dimensions – responsiveness, compensation and contact. In case of electronic banking, Al-Hawari et al. (2005) identified five dimensions of service quality, which are ATM quality, telephone-banking quality, internet-banking quality, customer perception of core service and customer perception of price. For online banking, Yang et al. (2001) found out the following dimensions of service quality – reliability, responsiveness, competence, ease of use, security and product portfolio. Besides these, other dimensions identified for technology banking were accuracy, feedback/complaint management, queue management, accessibility, personalization/customization and customer service (Joseph et al., 1999; Joseph and Stone, 2003). The dimensions identified by various scholars are summarized in Table 1.

**Table 1.** *Dimensions of e-service quality*

Research	E-service quality dimensions
Dabholkar et al. (2000)	efficiency, ease of use, performance, perceived control, and convenience
Swaid and Wigand (2009)	personalization, information quality, website usability, responsiveness, reliability, assurance
Bedi (2010)	assurance, empathy, reliability, responsiveness, tangible product availability, product convenience, interaction
Munusamy et al. (2010)	assurance, responsiveness, empathy, tangible, reliability
Ganguli and Roy (2011)	technology security and information quality, technology convenience, technology usage easiness and reliability, customer service
Sharma and Malviya (2013)	reliability and responsiveness, assurance and security, convenience of location, efficiency, and easiness to operate

**Source:** *Authors' own contribution.*

Most of the studies related to service quality of technology based service delivery are about online (or internet based) services (Collier and Bienstock, 2006; Parasuraman et al., 2005; Santos, 2003; Van Riel et al., 2001; Wolfenbarger and Gilly, 2003). Even for banking, most studies have examined the service quality related to the specific technologies like internet banking, ATM banking and self-service technology (SST) (Al-Hawari et al., 2005; Curran and Meuter, 2005). With the emergence of mobile banking as an alternative financial service delivery channel in Bangladesh where mobile penetration rate is high and the competition level of this channel is intensifying, there is a need to identify the service quality dimensions, as perceived by customers in the case of mobile banking services and develop a scale for measuring the service quality in the case of mobile banking customers. This study, therefore, seeks to explore the dimensions of mobile banking service quality and to develop a scale for measuring the service quality offered to mobile banking customers.

**Perceived service quality, satisfaction and behavioral intentions**

In addition to exploring the service quality dimensions, the present study will assess the relationship between service quality, customer satisfaction, as well as customer loyalty. Perceived service quality has been found to be a significant predictor of customer satisfaction and behavioral intentions (Cronin et al., 2000). As the most important measure for gaining a competitive edge, perceived quality is considered to be an important predictor and the key determinant of customer satisfaction and loyalty (McDougall and Levesque, 2000; Parasuraman and Grewal, 2000; Petrick and Backman, 2002). Woodruff (1997) contends that measures of perceived (attribute) quality are antecedents to overall customer satisfaction, and these measures are proven to correlate well with such customer behaviors as word-of-mouth recommendations and intentions to purchase. Dodds et al. (1991) also conceptualized a model where perceived value was the link between perceived quality, perceived sacrifice, and behavioral intentions. Cronin et al. (2000) examined the relationship between service quality, service value, satisfaction and behavioral intentions in six industries including spectator sports, participant sports, entertainment, fast food, healthcare and long-distance carriers. The results show that service value and quality influence customer satisfaction and behavioral intentions (in all industries except health care).

McDougall and Levesque (2000) investigated the relationship among three elements of value (core quality, relational quality and service value), customer satisfaction and future intentions across four services (dentist, hairstylist, auto repair and restaurant). The results revealed that all three variables of core quality, relational quality and service value significantly affected customer satisfaction which subsequently affected future intentions.

Satisfaction is another critical concept that has received much attention in general consumer behavior research as well as in research on services because it influences the choice of service source and the understanding of satisfaction provides managerial guidance in the industry (Danaher and Haddrell, 1996; Kozak, 2000). Tse and Wilton (1988) defined satisfaction as “the consumer’s response to the evaluation of the perceived discrepancy between prior expectations and the actual performance of the product as perceived after its consumption” (p. 204). Existing literature has indicated a wide variability in the definitions of satisfaction. The lack of agreement among these definitions impedes research into consumer satisfaction. Most of the studies conducted to evaluate consumer satisfaction have utilized the model of expectation/disconfirmation, which postulates that satisfaction is a result of the discrepancy between expectations and perceived performance, so that the consumer will feel satisfied whenever performance exceeds expectations. According to the expectation/disconfirmation model contributed by Oliver (1993), consumers develop expectations about a product before purchasing and subsequently, they compare their actual experience with expectations. A positive disconfirmation occurs if the actual performance/experience is higher than their expectation; that is the consumer is highly satisfied and willing to purchase the product again. Moreover, after making a thorough literature review of conceptual and operational definitions,

Giese and Cote (2000) concluded that there are three general components shared by the definitions: (1) consumer satisfaction is an emotional response; (2) the response refers to a specific focus; (3) the response is determined by limited time. With these in mind, the authors identify that specific definitions of consumer satisfaction should be used based on the context, taking into account the above characteristics.

The loyalty concept has been extensively investigated in the marketing literature and researchers defined loyalty using different dimensions. He (1997, p. 392) defined brand loyalty as “a deeply held commitment to rebuy or repatronize a preferred product or service consistently in the future, despite situational influences and marketing efforts having the potential to cause switching behavior”. This definition manifests the two different aspects of brand loyalty: behavioral and attitudinal loyalty.

Numerous researchers have investigated the relationship between customer satisfaction and brand loyalty (Back and Parks, 2003). It is generally believed that satisfaction leads to repeat purchases and positive word-of-mouth recommendations, which are primary indicators of loyalty. However, customer loyalty is not the same as customer satisfaction. Customer loyalty is often recognized as being a strategic objective for companies (Oliver, 1993). According to Petrick and Sirakaya (2004), customer loyalty is clearly a critical aspect for companies because it is more desirable, and less expensive to retain existing customers than to seek new ones. On the other hand, Oliver (1993) proposes that the real value of measuring customer satisfaction is the potential it creates to anticipate client’s post-consumption responses. That is, customer satisfaction measures how well a customer’s expectations are met by a given transaction, while customer loyalty measures how likely a customer is to repurchase and engage in partnership activities. Therefore, it is necessary to understand satisfaction as a necessary but not sufficient condition for loyalty. In other words, customers can have satisfaction without loyalty, but it is hard to have loyalty without satisfaction.

The purpose of the study is to predict mobile bank loyalty intent based on service quality. The proposed model is based on the comprehensive and critical literature review presented above. The study conceptualizes reliability and responsibility, assurance and security, convenience, efficiency, and easiness to operate as five dimensions of mobile banking service quality.

**Table 2.** *Definitions of the five dimensions of mobile banking service quality*

<b>Reliability</b>	The probability that services will perform as intended and consistently produces the same results.
<b>Responsiveness</b>	The customer’s perception of getting help when needed
<b>Assurance</b>	The customer’s perception of the confidence and trust towards the mobile banking services.
<b>Security</b>	The degree to which the mobile banking service is safe and protects customer information. Security always results into assurance.
<b>Convenience</b>	Refers to the ability to use the service anytime, anywhere and without delays.
<b>Efficiency</b>	Defines that service is simple to use, and requires minimum efforts.
<b>Easiness to operate</b>	Reflects the customer’s perception of the degree of user friendliness.

**Source:** *Authors’ own contribution.*

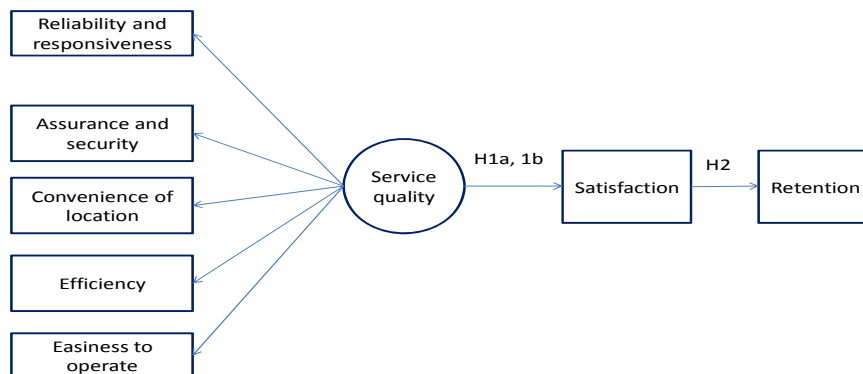
The model postulates that service quality represented by the five dimensions influences customer satisfaction, and the latter construct then influences loyalty intent. The proposed framework and its subsequent hypotheses therefore is:

*H1a: Mobile banking service quality influences customer satisfaction.*

*H1b. All five dimensions of service quality separately influence customer satisfaction.*

*H2: Customer satisfaction has a direct positive effect on customer loyalty in mobile banking service.*

**Figure 1.** The proposed model



**Source:** Authors' own research.

A psychometric data analysis through a field survey was conducted to test the hypotheses of this study. The survey utilized a structured questionnaire designed to collect data regarding consumer perceived service quality, satisfaction, and retention (see appendix A). The questionnaire had three major parts. The first part, adopted from the instruments used by Sharma and Malviya (2012), was used to explore the consumer perceived service quality dimensions; by Cronin and Taylor (1992) and Oliver (1989) to measure satisfaction; and by Cronin and Taylor (1992) to assess customer retention. The second part included questions about the purposes of use of mobile banking, frequency of use, time and place of use respectively. The third part collected the respondent's demographic data, such as age, gender, education, and occupation.

In order to reduce the respondents' inability to answer and their discomfort, native language Bangla was used for the survey instruments and correspondence. The adapted instruments were translated into native language Bangla using the back-to-back translation method. All the items (36) representing the seven constructs were rated on a 7 points Likert type scale ranging from 1 for strongly disagreement and 7 for strongly agreement.

As the secondary data reported that the majority mobile banking services users are young and economically marginal irrespective of education level and profession, the study used a convenience based random sampling technique among the mobile phone users for selecting respondents. A total of 250



respondents were approached and 225 of them responded. A group of 4<sup>th</sup> year students from the marketing research course has collected these data through in-person interviews in the Chittagong district, the 2<sup>nd</sup> largest city of Bangladesh, as part of their course project work. Thorough checking and editing found 9 questionnaires incomplete and unusable, and the remaining 216 questionnaires were codified and analyzed with the help of SPSS-22 version and Amos graphics-21.

### Research results

Out of the 216 respondents, 65% of them were under 30 years of age, 75% had at least college degree, and 60% of them were students, which indicates that the respondents were primarily young and educated (see Table 3).

**Table 3.** Demographical profile of respondents

			Occupation					Total
			Student	Business person	Service holder	Free-lancer	Others	
Age	< 18	Count	0	2	0	0	2	4
	18-25	Count	38	0	2	20	0	60
	26-30	Count	6	18	60	24	10	118
	31-40	Count	0	10	22	2	0	34
Total		Count	44	30	84	46	10	216

**Source:** Authors' own research.

On the other hand, the purpose for which using mobile banking was used was money transfer and utility bills payment, and in addition respondents use it for balance enquiry, shopping, loan payment (see Table 4).

**Table 4.** Purposes for using mobile banking services

Nature of Usage	Frequency	Percentage
Fund transfer	214	99.1%
Balance enquiry	88	40.7%
Bills payment	8	3.7%
Shopping	24	11.1%
Insurance payment	0	0%
Loan payment	0	0%

**Source:** Authors' own research.

The main purpose of the measurement model is to assess and verify that the indicators and scale items used for each construct are both reliable and valid. As the study constructs and their items were adapted from previous studies with established reliability and validity, tests were conducted using confirmatory mode. In addition, the data were tested for reliability using Cronbach's alpha. The confirmatory factor loadings for each item, after dropping out some of them from the original scales due to low loadings, and alpha value for each construct are shown in Table 5. As most research method guides treat a value higher than 0.7 for factor loadings and a value higher than 0.7 for reliability as acceptable, the values in the table indicate that the data collected from the survey are reliable and suitable for further analysis.

**Table 5.** Mobile banking service quality model: psychometric properties of measurement model

Constructs	Items	Loadings
Reliability and Responsiveness  <i>Cronback's alpha</i> $\alpha = .922$	1. My mobile banking provides prompt responses if my transaction is not processed.	.82
	2. If there is a mistake, my mobile makes it right quickly and effectively.	.97
	3. The bank quickly resolves mobile banking related problems.	.94
	4. I know exactly when my transaction will be performed.	.83
	5. Mobile banking provides me the services exactly as promised.	.76
Assurance and Security  <i>Cronback's alpha</i> $\alpha = .920$	1. I have full trust in my bank's mobile banking services.	.89
	2. I feel safe in my mobile banking transactions.	.93
	3. I feel secure in providing sensitive information during mobile banking transactions.	.87
Convenience  <i>Cronback's alpha</i> $\alpha = .933$	1. Using mobile banking saves time compared to going to a branch, ATM or using computer.	.76
	2. I can speak to a customer service representative if there is a problem related to mobile banking transaction.	.94
	3. All my mobile banking relevant transaction confirmation details are sent by SMS or e-mail within 24 hours.	.99
	4. Mobile Banking is available all the time.	.87
Efficiency  <i>Cronback's alpha</i> $\alpha = .768$	1. Using mobile banking does not require a lot of effort.	.62
	2. The mobile banking registration process is simple.	.89
	3. Mobile banking represents a positive experience for me.	.65
Easiness to operate  <i>Cronback's alpha</i> $\alpha = .900$	1. Mobile banking transactions/services are very simple and easy to use.	.86
	2. Using mobile banking it is easy to do what I want to do, for example transferring funds from my account to any other account, bill payments etc.	.88
	3. The interaction with the mobile banking systems is clear and easy to understand.	.86
Satisfaction  <i>Cronback's alpha</i> $\alpha = .994$	1. I believe I am satisfied with my bank's services.	.90
	2. Overall, I am pleased with my bank services.	.79
	3. Using the services of my bank is usually a satisfying experience.	.96
	4. My feelings toward my bank's services can best be characterized as very satisfied.	.92
Loyalty  <i>Cronback's Alpha</i> $\alpha = .947$	1. This bank is my first choice.	.87
	2. The next time my friend needs the services of a bank I will recommend my bank.	.93
	3. I have no regrets of having patronized my bank in the past.	.87
	4. I intend to continue using the bank in the future.	.94

**Source:** Authors' own research.

Finally, the confirmatory factor analysis with high loadings (see Table 6) confirmed the relevance and validity of all five dimensions of service quality in mobile banking service.

**Table 6.** Confirmatory factor loadings of the service quality dimensions

Factors	Loadings
Reliability and responsiveness	.91
Assurance and security	.87
Convenience in banking	.87
Mobile banking efficiency	.86
Easiness to operate	.87

**Source:** Authors' own research.

Considering service quality as a strong antecedent of customer satisfaction, the study ran regression analysis to test the relationship between overall service quality and satisfaction, as well as the relationship between all five dimensions of quality and satisfaction. An entry method of regression analysis indicates that service quality is a strong determinant of customer satisfaction (see Table 7), however, a stepwise regression analysis indicates that among the dimensions of service quality, reliability and responsiveness has the most influence on satisfaction (see Table 8) followed by efficiency and convenience. The other two dimensions' influence was found to be insignificant. So in the case of mobile banking, customer satisfaction significantly relies on reliability, responsiveness, efficiency, and convenience factors.

**Table 7.** Results of the regression analysis

Independent construct	Dependent construct	Beta ( $\beta$ )	R <sup>2</sup>	SE	t	p
Service quality	Satisfaction	.873	.763	.010	26.226	.000**
Service quality	Loyalty	.754	.568	.015	16.776	.000**
Satisfaction	Loyalty	.870	.757	.036	25.841	.000**

**Source:** Authors' own research. \*\*p < 0.001.

**Table 8.** Results of the stepwise regression: quality dimensions vs. satisfaction

Service quality dimensions	Beta ( $\beta$ )	R <sup>2</sup>	$\Delta$ R <sup>2</sup>	SE	t	p
Reliability and responsiveness	.542	.716	.716	.033	13.901	.000**
Efficiency	.535	.830	.115	.074	12.081	.000**
Convenience	.115	.836	.007	.044	2.936	.004*

**Source:** Authors' own research. \*\*p < 0.001; \*p < 0.05.

The literature reports that customer positive perceived service quality enhances customer satisfaction as well as retention. This study also found a significant influence of service quality on customer retention; however, the stepwise regression analysis reports that out of the five dimensions only two (reliability and efficiency) have a significant influence on the customer retention rate (see Table 9).

**Table 9.** Results of the stepwise regression: quality dimensions vs. loyalty

Service Quality Dimensions	Beta ( $\beta$ )	R <sup>2</sup>	$\Delta$ R <sup>2</sup>	SE	t	p
Reliability and responsiveness	.443	.534	.534	.053	7.603	.000**
Efficiency	.416	.621	.090	.104	7.148	.000**

**Source:** Authors' own research. \*\*p < 0.001.

In order to examine the simultaneous effect of the constructs, their relationships were further estimated by structural equation modeling. Figure 2 illustrates the relationships of the estimated model obtained with AMOS. The fit of the structural model was estimated by various indices. Standardized regression weights (Table 10) between all endogenous and exogenous variables were found to be significant, but the results of other indices of the model demonstrated only a moderate fit.

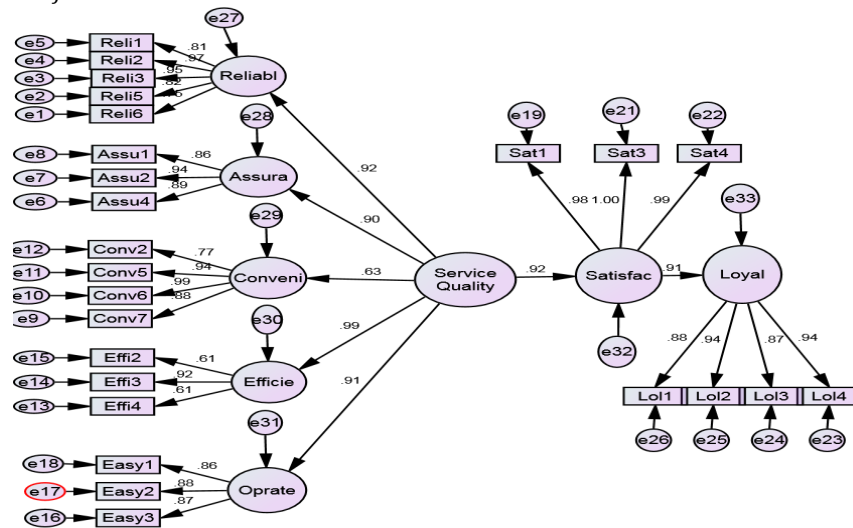
**Table 10.** Standardized regression weight of the model

Endogenous Variable	Exogenous Variable	Estimate	P value
Satisfaction	Service Quality	.923	.000
Reliability & Responsiveness	Service Quality	.906	.000
Assurance & Security	Service Quality	.872	.000
Convenience of location	Service Quality	.674	.000
Easy to Use	Service Quality	.863	.000
User friendly operation	Service Quality	.873	.000
Loyalty/Retention	Satisfaction	.870	.000

Source: Authors' own research.

For models with good fit, most empirical analyses suggest that the ratio of chi-square normalized to degree of freedom ( $\chi^2/df$ ) should not exceed 3.0, but here it was estimated to be 4.48. In addition, the obtained goodness-of-fit (GFI) measure was 0.88.; and the adjusted goodness-of-fit (AGFI) measure was 0.81, which are both close to the suggested values. The other two indices of good fit – the normalized fit index (NFI) and the comparative fit index (CFI) – satisfied the recommended value more than 0.9. Finally, the discrepancies between the proposed model and population covariance matrix, as measured by the root mean square error of approximation (RMSEA), are a little higher than the suggested cutoff value of 0.08 for good fit.

**Figure 2.** Structural model for mobile banking service quality and its relationship with satisfaction and retention



Source: Author's own research.

The magnitude and significance of the loading estimates indicate that all of the five dimensions of service quality are relevant in predicting service satisfaction. Moreover, service quality has a significant impact on service satisfaction toward mobile banking service as the structural coefficients for these paths are significant. Service satisfaction, in turn, has a significant impact on customer loyalty intent.

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### Conclusions and recommendations

Based on the above outcomes, we could suggest the following marketing implications to the management of mobile banking services. All the dimensions of service quality are relevant and should be emphasized in devising marketing strategies to compete in the competitive mobile bank market. However, future marketing campaigns devised to attract new Bangladeshi customers for mobile banking services should focus first of all on emphasizing the reliability, responsiveness followed by efficiency and convenience. And it is not only the marketing department which should keep these dimensions in mind, as banks should also seek to increase the quality of their services so as to be ready for future opportunities. For example, according to the World Bank, the Bangladeshi government wants to introduce mobile banking for government transfers as the ones required for safety net programs (e.g. The Primary Education Stipend Project which supports the educational participation of children coming from poor households). Those banks which will manage to convince public authorities that their mobile services are swift, reliable and responsive will have a huge advantage as they will gain access to a part of the market which was previously unapproachable. And then there is the report prepared by IFC (2013) on the mobile banking industry in Bangladesh which states that the awareness levels are quite low and that there is a question of trust that prevents the adoption of the service and, after adoption, it limits the types of transactions that customers perform through mobile banking.

### References

- Al-hawari, M., Hartley, N. and Ward, T. (2005), "Measuring Banks' Automated Service Quality: A Confirmatory Factor Analysis Approach", *Marketing Bulletin*, Vol. 16, No. 1, pp. 10-17.
- Asubonteng, P., McCleary, K.J. and Swan, J.E. (1996), "SERVQUAL revisited: a critical review of service quality", *The Journal of Services Marketing*, Vol. 10, No. 6, pp. 62-81.
- Back, K. and Parks, S. (2003), "A brand loyalty model involving cognitive, affective, and conative brand loyalty and customer satisfaction", *Journal of Hospitality and Tourism Research*, Vol. 27, No. 4, pp. 419-435.
- Baker, D. and Crompton, J. (2000), "Quality, Satisfaction and Behavioral Intentions", *Annals of Tourism Research*, Vol. 27, No. 3, pp. 785-804.
- Baker, J., Parasuraman, A., Grewal, D. and Voss, G.B. (2002), "The influence of multiple store environment cues on perceived merchandise value and patronage intentions", *Journal of Marketing*, Vol. 66, April, pp. 120-141.
- Bedi, M. (2010), "An integrated framework for service quality, customer satisfaction and behavioral responses in Indian banking industry – A comparison of public and private sector banks", *Journal of Services Research*, Vol. 10, No. 1, pp. 157-172.
- Caruana, A., Money, A.H. and Berthon, P.R. (2000), "Service quality and satisfaction: the moderating role of value", *European Journal of Marketing*, Vol. 34, No.11/12, pp. 1338-1352.
- Carman, J.M. (1990), "Consumer perceptions of service quality: an assessment of the SERVQUAL dimensions", *Journal of Retailing*, Vol. 66, No. 1, pp. 33-55.
- Collier, J.E. and Bienstock, C.C. (2006), "Measuring Service Quality in E-Retailing", *Journal of Service Research*, Vol. 8, No. 3, pp. 260-275.
- Cronin, J., Brady, M.K. and Hult, T.M. (2000), "Assessing the Effects of Quality, Value and Customer Satisfaction on Consumer Behavioral Intentions in Service Environments", *Journal of Retailing*, Vol. 76, No. 2, pp. 193-218.

- Cronin, J.J. and Taylor, S.A. (1992), "Measuring Service Quality: A Reexamination and Extension", *Journal of Marketing*, Vol. 56, No. 3, pp. 55-68.
- Curran, J.M. and Meuter, M.L. (2005), "Self-service Technology Adoption: Comparing Three Technologies", *Journal of Services Marketing*, Vol. 19, No. 2, pp. 103-114.
- Dabholkar, P.A., Shepherd, C.D. and Thorpe, D.I. (2000), "A Comprehensive Framework for Service Quality: An Investigation of Critical Conceptual and Measurement Issues through a Longitudinal Study", *Journal of Retailing*, Vol. 76, No. 2, pp. 139-173.
- Danaher, P.J. and Haddrell, V. (1996), "A comparison of question scales for measuring customer Satisfaction", *International Journal of Service Industry Management*, Vol. 7, No. 4, pp. 4-26.
- Deb, S.K., Harun, M.A. and Bhuiyan, M.R.U. (2011), "The dimensions affecting the adoption of mobile banking in Bangladesh", *Journal of Banking and Financial Services*, Vol. 5, No. 1, pp. 97-110.
- Dodds, B., Monroe, B. and Grewal, D. (1991), "The Effects of Price, Brand, and Store Information on Buyers' Product Evaluations", *Journal of Marketing Research*, Vol. 28, No. 3, pp. 307-319.
- Fazrul, R. (2014), "Mobile banking, key to financial inclusion", *TheDailyStar*, March 4, 2014, available at: [www.thedailystar.net/print\\_post/mobile-banking-key-to-financial-inclusion-14002](http://www.thedailystar.net/print_post/mobile-banking-key-to-financial-inclusion-14002) (accessed September 3, 2014).
- Fornell, C., Johnson, M.D., Anderson, E.W., Cha, J. and Bryant, B.E. (1996), "The American customer satisfaction index: nature, purpose, and findings", *Journal of Marketing*, Vol. 60, No. 4, pp. 7-18.
- Gallarza, M.G. and Saura, I.G. (2006), "Value dimensions, perceived value, satisfaction and loyalty: An investigation of university students' travel", *Tourism Management*, Vol. 27, No. 2, pp. 437-452.
- Ganguli, S. and Roy, S.K. (2011), "Generic technology-based service quality dimensions in banking - Impact on customer satisfaction and loyalty", *International Journal of Bank Marketing*, Vol. 29, No. 2, pp. 168-189.
- Giese, J.L. and Cote, J.A. (2000), "Defining consumer satisfaction", *Academy of Marketing Science Review*, Vol. 2000, No. 1, available at: [www.amsreview.org/amsrev/theory/giese00-01.html](http://www.amsreview.org/amsrev/theory/giese00-01.html) (accessed March 21, 2014).
- Grönroos, C. (1984), "A service quality model and its marketing implications", *European Journal of Marketing*, Vol. 18, No. 4, pp. 37-44.
- Howat, G., Crilley, G. and Milne, L. (1995), "Measuring customer service quality in recreation and parks", *Australian Parks & Recreation*, Summer, pp. 37-43.
- IFC – International Finance Corporation (2013), "IFC Mobile Money Scoping, Country report: Bangladesh", *World Bank Group*, available at: [www.ifc.org/wps/wcm/connect/c5a33c80407b90ef90b990cdd0ee9c33/Bangladesh+Scoping+Report+051513\\_final\\_publication.pdf?MOD=AJPERES](http://www.ifc.org/wps/wcm/connect/c5a33c80407b90ef90b990cdd0ee9c33/Bangladesh+Scoping+Report+051513_final_publication.pdf?MOD=AJPERES) (accessed September 12, 2014)
- Joseph, M. and Stone, G. (2003), "An empirical evaluation of US bank customer perceptions of the impact of technology in service delivery in the banking sector", *International Journal of Retail and Distribution Management*, Vol. 31, No. 4, pp. 190-202.
- Joseph, M., McClure, C. and Joseph, B. (1999), "Service quality in the banking sector: the impact of technology on service delivery", *International Journal of Bank Marketing*, Vol. 17, No. 4, pp. 182-191.
- Kabir, M.R. (2013), "Factors Influences the Use of Mobile Banking: Incident from a Developing Country", *World Review of Business Research*, Vol. 3, No. 3, pp. 96-114.
- Kim, G., Shin, B. and Lee, H.G. (2009), "Understanding dynamics between initial trust and usage intentions of mobile banking", *Information Systems Journal*, Vol. 19, No. 3, pp. 283-311.
- Knutson, B., Stevens, P. and Patton, M. (1995), "DINESERV: measuring service quality in quick service, casual/theme and fine dining restaurant", *Journal of Hospitality and Leisure Marketing*, Vol. 3, No. 2, pp. 35-44.
- Kozak, M. (2000), "A critical review of approaches to measure satisfaction with tourist destinations", *Tourism Analysis*, Vol. 5 No. 2/4, pp. 191-196.
- Lehtinen, U. and Lehtinen, J.R. (1991), "Two Approaches to Service Quality Dimensions", *The Service Industries Journal*, Vol. 11, pp. 287-303.

- Lewis, R.C. and Booms, B.H. (1983), "The marketing aspects of service quality", *International Journal of Quality & Reliability Management*, Vol. 12, No. 9, pp. 139-153.
- Luo, X., Li, H., Zhang, J. and Shim, J.P. (2010), "Examining multi-dimensional trust and multi-faceted risk in initial acceptance of emerging technologies: An empirical study of mobile banking services", *Decision Support Systems*, Vol. 49, No. 2, pp. 222-234.
- McDougall, G. and Levesque, T. (2000), "Customer satisfaction with services: putting perceived value into the equation", *Journal of Services Marketing*, Vol. 14, No. 5, pp. 392-410.
- Munusamy, J., Chelliah, S. and Mun, H.W. (2010), "Service quality delivery and its impact on customer satisfaction in the banking sector in Malaysia", *International Journal of Innovation, Management and Technology*, Vol. 1, No. 4, pp. 398-404.
- Oh, H. (1999), "Service quality, customer satisfaction, and customer value: A holistic perspective", *International Journal of Hospitality Management*, Vol. 18, No. 1, pp. 67-82.
- Oliver, I., (1993), "A conceptual model of service quality and service satisfaction: compatible goals, different concepts", *Advances in Services Marketing and Management*, Vol. 2, pp. 65-85.
- Ostrowski, P.L., O'Brien, T.V. and Gordon, G.L. (1994), "Determinants of service quality in the commercial airline industry: difference between business and leisure travelers", *Journal of Travel and Tourism Marketing*, Vol. 3, No. 1, pp. 19-47.
- Parasuraman, A., Zeithaml, V.A and Berry, L.L. (1988), "SERVQUAL: a multiple item scale for measuring consumer perceptions of service quality", *Journal of Retailing*, Vol. 64, No. 1, pp. 12-40.
- Parasuraman, A., Zeithaml, V.A. and Malhotra, A. (2005), "E-S-QUAL: a multiple-item scale for measuring the electronic service quality", *Journal of Service Research*, Vol. 7, No. 3, pp. 213-233.
- Parvin, A. (2013), "Mobile banking operation in Bangladesh: prediction of future", *Journal of Internet Banking and Commerce*, Vol. 18, No. 1, available at: [www.arraydev.com/commerce/JIBC/2013-04/AFROZAPARVINv03.pdf](http://www.arraydev.com/commerce/JIBC/2013-04/AFROZAPARVINv03.pdf) (accessed September 12, 2014).
- Petrick, J. F. and Backman, S.J. (2002), "An examination of the construct of perceived value for the prediction of golf travelers; Intentions to revisit", *Journal of Travel Research*, Vol. 41, August, pp. 38-45.
- Santos, J. (2003), "E-service quality: a model of virtual service quality dimensions, *Managing Service Quality*, Vol. 13, No. 3, pp. 233-246.
- Seth, N., Deshmukh, S.G. and Vrat, P. (2005), "Service quality models: a review", *International Journal of Quality & Reliability Management*, Vol. 22, No. 9, pp. 913-949.
- Shohag, A. (2013), "Analysis of customer satisfaction and identification of future progress: a case study on 'mcash' mobile banking service", Bachelor Thesis, *Jahangirnagar University, Dhaka*.
- Swaid, S.I. and Wigand, R.T. (2009), "Measuring the quality of e-service: Scale development and initial validation", *Journal of Electronic Commerce Research*, Vol. 10, pp. 13-28
- Tse, D. and Wilton, C. (1988), "Models of consumer satisfaction: An extension", *Journal of Marketing Research*, Vol. 25, No. 2, pp. 204-212.
- Van Riel A.C.R, Liljander, V. and Jurriëns, P. (2001), "Exploring consumer evaluations of e-services: a portal site", *International Journal of Service Industry Management*, Vol. 12, No. 4, pp. 359-377.
- Wolfenbarger, M. and Gilly, M.C. (2003), "eTailQ: Dimensionalizing, measuring and predicting retail quality", *Journal of Retailing*, Vol. 79, No. 3, pp. 183-198.
- Woodruff, R.B. (1997), "Customer value: The next source for competitive edge", *Journal of the Academy of Marketing Science*, Vol. 25, No. 2, pp. 139-153.
- pi Strategy Consulting (2014), "Mobile Financial Service: Consumer Insights, Research brief, available at: [pistrategy.org/PDFs/MFS-CI-ResearchBrief-Lite.pdf](http://pistrategy.org/PDFs/MFS-CI-ResearchBrief-Lite.pdf) (accessed June 12, 2014).
- Yang, Z., Peterson, R.T. and Huang, L. (2001), "Consumer perceptions of service quality in Internet based electronic commerce", *Proceedings of the EMAC Conference*, May, 8-11, Bergen.

Items	Mean (1 - 7)	Standard Deviation
1. My mobile banking provides prompt responses if my transaction is not processed.	5.16	1.221
2. If there is a mistake, my mobile makes it right quickly and effectively.	4.49	1.201
3. The bank quickly resolves mobile banking related problems.	4.39	1.234
4. Mobile banking charges related to transaction, taxes etc. are clearly presented to me.	5.16	1.058
5. I know exactly when my transaction will be performed.	5.57	.643
6. Mobile banking provides me the services exactly as promised.	5.10	1.250
7. My mobile banking provides accurate records of all my transactions.	6.18	.991
8. My mobile banking transaction is processed accurately.	5.91	.910
9. I have full trust in my bank's mobile banking services.	4.95	.823
10. I feel safe in my transactions while doing mobile banking.	4.84	.854
11. The bank's name is well-known and has a good reputation so I have full confidence in the bank's mobile banking services.	4.90	.974
12. I feel secure in providing sensitive information while doing mobile banking transactions.	4.65	.799
13. I am sure that the bank does not misuse my personal information.	5.05	.978
14. Mobile banking enables me to complete a banking transaction quickly.	5.51	1.043
15. Using mobile banking saves time compared to going to branch, ATM or using a computer.	5.83	1.078
16. It is easy to look for banking information.	4.50	1.025
17. The bank provides all communication media like SMS, email, toll free no. to communicate problems related to mobile banking.	5.40	1.020
18. I can speak to a customer service representative if there is a problem related to my mobile banking transactions.	6.30	1.135
19. All my mobile banking relevant transaction confirmation details are sent by SMS or e-mail within 24 hours.	6.39	1.064
20. Mobile banking is available all the time.	6.42	.785
21. It is easy to navigate i.e. get anywhere on the mobile banking site.	4.53	.889
22. Using mobile banking does not require a lot of effort.		
23. The mobile banking registration process is simple.	4.79	.984
24. Mobile banking creates a positive experience for me.	4.90	1.099
25. Mobile banking transaction/services are very simple and easy to use.	5.27	.941
26. Using mobile banking it is easy to do what I want to do, for example transferring funds from my account to any other account, bill payments, etc.	5.19	.697
27. The interaction with the mobile banking systems is clear and understandable.	5.59	.830
28. The mobile banking screen incorporates a good color scheme, easy on the eye, visually attractive and have an effective layout.	5.06	.745
29. I believe I am satisfied with my bank's services.	5.06	.923
30. Overall, I am pleased with my bank services.	4.82	1.081
31. Using services from my bank is usually a satisfying experience.	4.77	1.044
32. My feelings toward my bank's services can best be characterized as very satisfied.	4.81	1.034
33. This bank is my first choice.	4.56	1.033
34. The next time my friend needs the services of a bank I will recommend my bank.	4.58	1.323
35. I have no regrets of having patronized my bank in the past.	4.63	1.186
36. I intend to continue using the bank in the future.	5.12	1.277