ABSTRACT

The aim of this research is to find out the relationship between e-banking service quality (i.e., service quality, information quality and system quality) and Customer satisfaction among customers of a state owned schedule Bank in Dhaka, Bangladesh. A judgmental sampling technique was employed for this research. This study was quantitative in nature. It will see the relationship of these variables i.e., service quality, information quality and system quality and customer satisfaction of the customer of state owned schedule Bank. 200 questionnaires were sent to different customer of that Bank within Dhaka city and the study will be analyzed by applying multiple regression analysis using SPSS software version 22, because there are 3 independent variables and their affects have to be seen on the customer satisfaction which is the sole dependent variable.

KEYWORDS: e-Banking service quality; Customer satisfaction; Bangladesh

INTRODUCTION

The world is changing very fast in all aspects such as socially, politically, economically, technologically, financially, etc. Hence, the lifestyle and taste of human being are also changing rapidly. Nowadays the customer prefers e-banking services rather than branch banking. It is proved in different ways that technology has broken the geographical, legal and industrial barriers and has created new products and services [1]. The development of e-banking services in Bangladesh is one of the
most booming services in banking industries since launched. Many studies have been conducted to assess users satisfaction with e-banking services.

**LITERATURE REVIEW**

*e-Banking* is the up-to-the-minute service carriage network for banking services in Bangladesh. Banks are using electronic networks to connect and perform business with both domestic and international customers. With the development of the Internet (1990s), banks are increasingly using electronic networks for receiving directions and transporting their products and services to their customers. There are various definitions of e-banking as followings: e-banking is the access of the customers to bank services by secure intermediaries without any physical presence [2]. By definition e-banking varies amongst researches partially because e-banking refers to several types of services through which bank customers can request information and carry out most retail banking services via computer, television or mobile phone. It as an electronic connection between bank and customer in order to prepare, manage and control financial transactions. E-banking can also be distinct as a variety of following platforms: PC Banking, Internet banking, Tele-banking and mobile banking.

It includes the methods that enable bank’s customers, individuals or businesses, to access accounts, transact or obtain information on financial products and services through a network, including the Internet or mobile phone. These terms refer to a number of ways in which customers can access their banks without having to be physical presence at the bank branch. E-banking may be understood as a term that covers all these ways of banking business electronically.

- **Tele-banking** service is provided by phone or mobile. To access an account it is required to dial a particular telephone number (known as hot line or hunting number) and there are several options of services.

- **PC-banking** is increasing consciousness of the importance of computer learning has resulted in increasing use of personal computers through the entire world. The term “PC-banking” is used for banking business transacted from a customer’s PC, i.e., customers can use their personal computers at home or at their office to access their accounts through the banks intranet proprietary software system by using password.

- **Internet banking** would free both bankers and customers of the need for proprietary software to carry on with their online banking transactions. Customer behavior is changing rapidly. Now the financial service is characterized by individuality, independence of time and place and flexibility.

- **Mobile banking** a very recent innovation of e-banking services. It is a wireless internet applications of banking-sometimes called m-banking. With the combination of internet and mobile phone, a new service (mobile data service) is thus enabled and the first such wireless internet commercial transaction was performed by the banking industry.

Benefits of e-banking serve several benefits to any societies. From the banks point of view, the first benefit for the banks offering e-banking services is better labelling
and better responsiveness to the market. Those banks that would offer such services would be perceived as leaders in technology implementation. Consequently, they would enjoy a better brand image. The other benefits are possible to measure in monetary terms. The main aim of every business is to maximize profits for its possessors and banks are not out of that aim but at the time of maximizing profits banks perform some social responsibilities through charitable and other projects.

Automated e-banking services offer a perfect opportunity for maximizing profits. The main benefit from the bank customers' point of view is weighty saving of time by the automation of banking services processing and introduction of an easy maintenance tools for managing customer's money. The main advantages of e-banking for corporate customers are reduction of costs in using the e-banking services, increasing comfort and timesaving, transactions can be made anytime anywhere without requiring the physical interaction with the bank, quick and continuous access to information, they can check on multiple accounts at the click of a button, e-banking facilities speed up cash cycle and increases competence of business processes as huge variety of fund and cash management instruments are available on Internet sites of banks, private customers seek slightly different kind of benefits from e-banking. Aladwani [3] has found that providing faster, easier and more reliable services to customers were amongst the top drivers of e-banking development. However, these can be highlighted that these are most effective benefits from e-banking services: the cost of availing and using the various banking products and services is reduced. All the banking transactions can be performed from the comfort of the home or office or from the place a customer wants to. The response of the medium is very fast; therefore customers can actually wait till the last minute before concluding a fund transfer.

Customers can download their history of different accounts and do a "what-if" analysis on their own PC before affecting any transaction on the web. This will lead to better funds management.

Economic benefits, Lower operational costs of banks, Automated process, Accelerated credit decisions, Lowered minimum loan size to be profitable, Potentially lower margins, Lower cost of entry, Expanded financing reach, Increased transparency, Expand reach through self-service, Lower transaction cost, Make some corporate services economically feasible for society, Make anytime access to accounts and loan information possible, From society perspective E-banking business makes access to finance from banks attractive. Society have benefited from the development of e-finance and gradually step ped out of the informal sector.

In particular, e-finance offers the following attractive benefits for society: Ease of use, Lower costs of financing, Convenience, Time savings, Operational efficiency. E-banking is optimal integration of all the activities of a bank via using modern IT that all the required services can be given to the customers. It enables customers to browse principal bank products and services seven days a week through their personal computers [4].

Types of E-Banking Services
There are three basic types of e-banking service qualities such as: system quality, information quality and service quality.

- **Service Quality**, a very popular measure for service quality in Information System is developed by Pitt et al. [5]. The dimensions of the instrument include tangibles: Reliability, responsiveness, assurance, and empathy, Delone et al. [6] originate that the importance of the relationship by the user is mainly increasing in the Information Technology departments, hence, they highlighted on developing a construct measurement on service quality in order to update their model.

- **Information Quality** refers to the quality of the information or the output that the system produces. The operational potential of information quality [7] depends on factors like accuracy, precision, currency, timeliness, reliability, completeness, conciseness, relevance, and the preferred format. The other measures include sufficiency, understandability, freedom from bias, timeliness, reliability, relevance to decisions, comparability, quantitateness [8] completeness of information, accuracy of information [9] ease of navigation, privacy, and security [10,11] as well as customization which are some of the system quality measures discussed by Delone [6] in the extended model.


**CUSTOMER SATISFACTION**

Over the years, multiple definitions of satisfaction have been used in the marketing discipline. The wide transformation in defining the construct of satisfaction is best reconciled in their definition of satisfaction as “a summary affective response of varying intensity with a time-specific point of determination and limited duration directed toward focal points of product acquisition and/consumption.” We conceptualize satisfaction as a customer’s overall evaluation of a product or service in terms of whether that product or service has met their needs and expectances.

Customer satisfaction is a key agent in formation of customer’s desires for future purchase [18]. Furthermore, the satisfied customers will probably talk to others about their good experience. This fact, especially in the Middle Eastern cultures, where the social life has been shaped in a way that social communication with other people enhances the society, is more significant [19]. Customer satisfaction is fundamental to the marketing concept, which holds that satisfying customer needs is the key to generating customer loyalty. Customer satisfaction generally means customer response in the context of the state of fulfillment, and customer adjudication of the fulfilled state [20]. It is defined as an overall negative or positive sense about the net value of services received from a provisional [21]. Kotler described satisfaction as a
person’s feeling of enjoyment or disappointment resulting from comparing a product’s perceived performance (or outcome) in relation to their expectations. Now we consider the construct of satisfaction in the online context. Anderson and Srinivasan [13] defined electronic satisfaction as the contentment of the customer with respect to their prior purchasing experience with a given electronic commerce.

**Research Objectives Are:**

1. To find out the relationship between service quality and customer satisfaction.
2. To find out the relationship between information quality and customer satisfaction.
3. To find out the relationship between system quality and customer satisfaction (Figure 1).

![Conceptual framework (SERVQUAL)](image)

**Figure 1:** Conceptual framework (SERVQUAL)

**Hypothesis**

From the above mentioned model the following main hypotheses are developed:

H1: Service quality is positively associated with customer satisfaction
H2: Information quality is positively associated with customer satisfaction
H3: System quality is positively associated with customer satisfaction.

**RESEARCH METHODOLOGY**

**Data Collection**

Random Sampling Technique is used for this study. In this study state owned Bank has been selected fully on-line based bank in Bangladesh and most of the users of e-banking are living in the capital city of Bangladesh.

**Sample Plan**

Our total population was 6000 and so 200 sample size was taken. Finally, 160 questionnaires were correctly completed and received from them. The customers were selected by random sampling. All data collection procedures were designed to ensure the anonymity. Respondents typically held purposive sample. For survey, few questionnaires were designed to collect data. Questionnaires were assembled to know about the relationship between e-banking service quality (i.e. system quality,
information quality and service quality) on customer satisfaction of that aforesaid Bank of Dhaka Branches only.

**Questionnaire Design**

The respondents responded to questions under each variable on five Likert Scale with “Strongly Agree” dictating the highest level of satisfaction, “Strongly Disagree” as the highest level of dissatisfaction. A few demographic questionnaire were asked for more interpretation of responses.

**Model:** It has used the customer satisfaction as the dependent variable and three dimensions are independent variable. The OLS Regression model has been run to determine the significance level of variables for the customer satisfaction in E-banking Service Quality.

The basic model was as follows:

Customer Satisfaction in e-banking = f (service quality, information quality and system quality)

\[ CS = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + e \]

Where \( CS \) = Customer Satisfaction, \( X_1 \) = service quality, \( X_2 \) = information quality, \( X_3 \) = system quality, there are \( \alpha \) and \( \beta \) s are coefficients to estimate and 'e' is the error term.

**ANALYSIS AND RESULT**

**Data Analysis**

SPSS (Statistical Package for Social Sciences) version 22 is used to analyze the data. After the data collection an optimum research model has been applied to the results obtained and then these results are entered in SPSS to analyze the results. Multiple regression analysis, is applied as there are more than one independent variables affecting dependent variable.

**Validity and Reliability**

The reliability of the measures was assessed using the inter-item consistency measure of Cronbach's Alpha (Tables 1a and 1b). The alpha for all independent variable (IV) and dependent variable (DV) ranged from .761 to .814 and exceed the minimum acceptable value of 0.7. Hence no item was deleted.

**Table 1a:** Validity and reliability
### Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>Cronbach's Alpha Based on Standardized Items</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.832</td>
<td>.833</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: SPSS result from field work

#### Table 1b: Cronbach's Alpha Value

<table>
<thead>
<tr>
<th>Service Quality</th>
<th>Information Quality</th>
<th>System Quality</th>
<th>Customer Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.77</td>
<td>0.814</td>
<td>0.804</td>
<td>0.761</td>
</tr>
</tbody>
</table>

Source: SPSS result from field work

### Test of Hypothesis

At first, this section explains the general sample description and descriptive statistics of each study constructs with the graphical presentation. Then, a hypothesis test has been conducted to find out the relationships between each of the variables of this study. Finally, this section concludes with the summary of findings related to the hypotheses concerning service quality, information quality, system quality and customer satisfaction and the summary of few questions. Based on the 160 sample bank customers, the percentages of male and female respondents are 73.8% and 26.3% respectively, which show the customers of the Bank. In the whole sample, 33.1% of respondents fell in the age range of 20-30, 44.4% fell in the range of 31-40, 17.5% fell in the range of 41-50 and 5.0% fell in above 50. In terms of qualification, the respondents are SSC (5.6%), HSC (19.4%) Graduate (33.1%), Post Graduate (39.4%) and others (1.9%). 68.8% of respondents are married, 30.6% are single and 0.6% is not in a relationship. 47.5% of respondents are service holders, 20.6% are students and 18.8% are engaged with business. The users of e-banking service are 96.9% and most of them are service holder’s percentage of which is 47.5% of 160 customers of state owned schedule Bank.

### Descriptive Statistics

High Standard Deviation means that the data are wide spread, which means that customers’ satisfaction on e-banking service quality is above satisfactory level Table 2 shows the customers' satisfaction on e-banking service quality with a mean value of 3.80 on a 5 point Likert scale which is above satisfactory level indication.

#### Table 2: Descriptive Statistics
Correlation

Correlation is significant when the value is less than 0.05. In this study, the service quality is correlated with customer satisfaction means at the value of 0.000, information quality is correlated with customer satisfaction at the value of 0.000 and system quality is correlated with customer satisfaction at the value of 0.000. These are significant results (Table 3).

Table 3: Correlation

<table>
<thead>
<tr>
<th></th>
<th>Service Quality</th>
<th>Information Quality</th>
<th>System Quality</th>
<th>Customer Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
<td>.522**</td>
<td>.555**</td>
<td>.664**</td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (1-tailed).

b Listwise N=160

Source: SPSS result from field work

Regression

From the ANOVA test (Table 4a) it shows the sig value .05 is greater than the calculated Sig value 0.000. It reflects the null hypothesis at 5% level of significance.

It does mean there is a significant correlation between dependent and independent variable. The overall predictability of the model is shown in the model summery table. The adjusted R square value of .521 indicates that the model explains roughly about 52% of the factors responsible for e-banking service quality which is significant.
(F=58.69, p<0.000) (Table 4b). F values imply that the model and data are well fit in explaining customer satisfaction in e-banking services.

**Table 4a: Model Summary**

<table>
<thead>
<tr>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>.728</td>
<td>0.53</td>
<td>0.521</td>
<td>0.52549</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), System Quality, Information Quality, Service Quality  
b. Dependent Variable: Customer Satisfaction  
Source: SPSS regression result from field work

**Table 4b: ANOVA**

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>48.621</td>
<td>3</td>
<td>58.691</td>
</tr>
<tr>
<td>Residual</td>
<td>43.078</td>
<td>156</td>
<td>.000b</td>
</tr>
<tr>
<td>Total</td>
<td>91.7</td>
<td>159</td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Customer Satisfaction  
b. Predictors: (Constant), System Quality, Information Quality, Service Quality  
Source: SPSS regression result from field work

**Table 4c: Regression Coefficients**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>(Constant)</td>
<td>0.61</td>
<td>0.25</td>
</tr>
<tr>
<td>Service Quality</td>
<td>0.39</td>
<td>0.066</td>
</tr>
<tr>
<td>Information Quality</td>
<td>0.22</td>
<td>0.063</td>
</tr>
<tr>
<td>System Quality</td>
<td>0.22</td>
<td>0.07</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Customer Satisfaction

ANOVA test it shows that sig value 0.005 is greater than the calculated sig value 0.000. It reflects the null hypotheses are accepted in this research. Therefore, there is significant relationship between e-banking service quality and customer satisfaction of state owned schedule Bank’s customer. It means there was a significant correlation between dependent variable and independent variables.

From the above findings we can develop the following regression model:
CS = 0.612 + 0.394X1 + 0.217X2 + 0.222X3

SE (.250) ( .066) ( .063) ( .070)

T- value (5.991)** (3.455)** (3.195)**

R square = 0.521, F = 58.691 ** = Significant Level is at 99%

Where CS = Customer Satisfaction,
X1 = Service quality
X2 = Information quality
X3 = System quality

Table 4c shows that the standardized coefficient between customer satisfaction and service quality, information quality and system quality is 5.991, 3.455 and 3.195 respectively. Here 100% change in service quality leads to 60% change is customer satisfaction level, 100% change in information quality leads to 34% change is customer satisfaction level, 100% change in system quality leads to 32% change is customer satisfaction level of the said Bank.

CONCLUSION

The results of this study provide there is positive relation between customer satisfaction and service quality of Bank. Even though the results indicate that hypothesis tested gave significant result and it is clear that entire directional hypothesis is true and gave positive result. Furthermore this state owned Bank needs to improve their service quality more and more. There are more commercial banks in Bangladesh. Hence, to survive in the banking industry this bank has to take new innovative ideas to satisfy their customer otherwise they will lose their customer and it will decline their profit margin. They need to improve their e-banking facilities with customer services.

LIMITATION AND FUTURE RESEARCH RECOMMENDATION

While collecting data from different customer of state owned schedule Bank we found that they have not clear conception about e-banking service quality, they have not enough time to reply our question and only Dhaka city of Bangladesh has been considered. Future researchers can concentrate on this issue for further work on it, because still in Bangladesh we are in very early stage of e-banking service quality. It can be applied not only to banking sector but also any kind of service sector in Bangladesh.
REFERENCES