

## **Factors Impacting Effective Management of Web based Service: A Study on the Banking Industry of Bangladesh**

Surajit Sarbabidya\*

*The advent of web technology has revolutionized the business expansion process of commercial organizations from the conventional marketplace to modern online marketplace. This has further been accelerated since 2009 with the promulgation of the 'Digital Bangladesh Vision 2021' of the country. Thereafter, the supportive initiatives of the Government have increased the use of web technology among the mass people and the organizations irrespective of their nature of size and operation. The banks in Bangladesh have led this momentum by providing pleasant experience to the customers of this industry with necessary information and help, convenient and interactive service, immediate complaint resolution, prompt response to their queries, etc. As a result, the web based market of the banks has become fiercely competitive. The earlier research studies found that website management factors such as webpage loading speed, navigability, transaction privacy and security, user friendly design and the likes play very significant role in the effective management of web based services. However, very few studies focused on web based banking services. So, this indicates to the research problem since there is a research gap. This is because the current study will focus on the identification of the factors which have significant influencing role on the effectiveness of web based service management of the banking industry of Bangladesh. The current study is the combination of both primary and secondary data collection and their analyses in which, the primary data have been collected from a recent one (1) month survey on January 2017 over the sample size of 110 respondents who all are the customers of banking service using random sampling method through a structured and self-administered questionnaire based extensive survey comprising of open-ended and non-forced, balanced and odd numbered non-comparative itemized questions using a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). The inferential statistical tools have been adopted to examine the role on the effectiveness of web based service management of the banking industry of Bangladesh.*

**Field of Research:** Management and IT

**Keywords:** web based banking service, effective management, banking industry

### **1. Introduction**

The advent of web technology has revolutionized the business expansion process of commercial organizations from the conventional marketplace to modern online marketplace. As a result, even a startup business organization also can dare to compete with the market leaders only because of its reach to the wider sections of the customers through web presence. Thus, web technology has influenced most of the banks to this trend. Now, almost each of the banks in Bangladesh has launched its website to easily reach to the majority section of the society through online and serve them with necessary information, help, convenient and interactive service experience, immediate complaint resolution, prompt response to customer queries, etc. Hence, the web based market of the banking industry has become fiercely

---

\*Dr. Surajit Sarbabidya, Professor, Department of Business Administration, School of Business, Britannia University, Cumilla, Bangladesh. Email: [surajitsarbabidya@gmail.com](mailto:surajitsarbabidya@gmail.com)

competitive. To sustain in such competitive market, a unique and functionally full-fledged active website with faster loading speed, navigability, transaction privacy and security, user friendly design, etc., is very important for a commercial bank. Indeed, the convenience, interactive and prompt method of banking services through such dynamic web technologies have acted as principal reasons or motivation behind this study to examine the factors affecting the effective management of web based service.

From the findings of the eminent researchers in the literature review section, it is clearly evident that a well-designed, informative, visually appealing and interactive web management system such as website is an integral part of the marketing program of a banking institution. It is a matter of **limitation** of this study that there is paucity of available secondary information on the influencing factors of effective management of web based banking service because none of the study was found directly related to the respective arena from Bangladesh perspective. Moreover, very few of the previous studies covered both qualitative and quantitative aspects of web based banking services. Again some of the studies focused only on one or few variables as factors of such services. For example, the findings of the previous studies confined to single aspect which have been exhibited as variable like v1, v2, v4, v5 and v6 in the Table 4. This means that there are limited research findings on some of the identified factors. So, it is clearly evident that there is a **research gap** and to mitigate this gap a rigorous research is yet to be systematically attempted. With this end in view, the present study investigates the **research question**: “Is there any factor which may affect the effective management of web based service of the Banking Industry of Bangladesh?” Here, with relation to the question, the following **hypothesis** has been set to exhibit the appropriate answer:

H<sub>0</sub>: There is no factor which may affect the effective management of web based service of the Banking Industry of Bangladesh.

H<sub>a</sub>: There are factors which may affect the effective management of web based service of the Banking Industry of Bangladesh.

From the light of the above hypothesis, the principal **objective** of this study is to investigate whether there is any factor which may affect the effective management of web based service of the Banking Industry of Bangladesh or not.

This paper is organized with the various sections. Section 1 deals with introduction, Section 2 focuses on the background of the study, Section 3 portrays the literature review, Section 4 goes with the methodology of the study, Section 5 deals with the analysis and findings, and Section 6 draws a constructive conclusion including uniqueness of the study, new findings, significance, limitations and contribution.

## 2. Background of the Study

The banking industry in Bangladesh started its journey with 6 nationalized commercialized banks, 2 state owned specialized banks and 3 foreign banks after the independence (<https://www.bb.org.bd/fnansys/bankfi.php>). In the 1980's banking industry achieved significant expansion with the entrance of private banks.

## Sarbabidya

Now, there are 56 scheduled banks including 6 State Owned Commercial Banks (SOCBs), 2 specialized Banks (SDBs), 39 private commercial banks (PCBs) comprising of 31 conventional PCBs and 8 Islami Shariah based PCBs and 9 Foreign Commercial Banks (FCBs) in Bangladesh who operate under full control and supervision of Bangladesh Bank which is empowered to do so through Bangladesh Bank Order, 1972 and Bank Company Act, 1991. Besides these, there are now 4 non-scheduled banks in Bangladesh which are: Ansar VDP Unnayan Bank, Karmashangosthan Bank, Probashi Kollyan Bank and Jubilee Bank.

In the recent time, banks in Bangladesh are providing information in many areas over their websites. Such banking services include enquiry about account balance, cheque status, exchange rate or interest rate; fund transfer among accounts of the same customer, opening or modifying term deposit account, for request statement, cheque book or pay order, account summary, account details; standing instructions, bills payment, loan repayment, loan information, stop cheque payment, refill prepaid card, password change, bank guarantee application, lost card (debit/credit) reporting, pay credit card dues, view credit card statement, or check balance and the likes.

Since 2009 the 'Digital Bangladesh Vision 2021' of the country and thereafter the supportive initiatives of the Government has increased the use of web technology among the mass people and the organizations irrespective of their nature of size and operation. The advent of this rigorous state-of-the-art web technology has also made business transaction, information search and customer service as an enjoyable experience for the banking customers. As a result, it is very convenient solution for the customers to avail banking service at their own pace from anywhere in Bangladesh and at anytime through an internet connected and web supported device. Thus, the growth of the web management service among the banking customers is phenomenal. There are many reasons behind such growth of which two major reasons are as follows:

At present the number of internet users in Bangladesh is 103.476 million (BTRC, June, 2020) which is shown in **Table 1**:

**Table 1: Internet Subscribers in Bangladesh June 2020**

<b>Operators</b>	<b>Subscribers (in millions) in June 2020</b>
Mobile Internet	94.905
ISP + PSTN	8.571
<b>Total</b>	<b>103.476</b>

**Source:** BTRC Website

<http://www.btrc.gov.bd/content/internet-subscribers-bangladesh-june-2017>

The number of active people between 15 to 59 years is again 101.91 million which is 63.6 percent of the total 160.996 million people in Bangladesh (UN). This section includes students, professionals, businesspersons, homemaker, etc., who are their active part of life. This segment is the main users of web technologies. However, the other sections of the society have also adopted themselves to the use of web technology in their daily work schedule.

## Sarbabidya

So, the active section of the country which affords internet is an attractive segment for the banks in terms of size and repeat usage volume. As a result, there is acute competition among the banks to render excellent banking service through well designed, easy to use, responsive, interactive, informative, updated, relevant, reliable, unique, visually appealing, secured, helpful and above all any platform and device friendly website. From this perspective, it seems to be justified for the banking industry of Bangladesh to undertake a research in order to examine the factors affecting the effective management of web based service of the Banking Industry of Bangladesh.

Web based management services among the banks is gaining its importance in Bangladesh. This is reflected in the findings of the several researches. For instance, Ali and Akter (2010) argued that a transitional period in the banking sector of Bangladesh has been passing through since shifting from the traditional banking system to the online banking system.

Atiur Rahman (2010) who is the Governor of Bangladesh Bank argued that Bangladesh Bank has achieved a historic milestone in the trade and business arena, departing from conventional banking with the introduction of e-banking recently; a giant stride towards digital Bangladesh.

The results of the study by Jahangir and Begum (2008) indicate that perceived usefulness, ease of use, security and privacy, and customer attitude are significantly and positively related to customer adaptation of e-banking.

### **3. Literature Review**

Like other industries effective management of web based service has also become an important issue behind the success of the Banking Industry of Bangladesh.

Users perceptions towards the web based service has a greater impact on on-line perception of the company (Allen et al., 2007). Attitude towards website is related to web design (San Martín & Camarero, 2008). A number of studies found that factors like accuracy, ease of use, efficiency, functionality, reliability, responsiveness, navigability, usefulness and web appearance can positively influence website users (Yang et. al., 2005). They also measured users' attitudes to web based service on the basis of dimensions: usability (ease of use), usefulness of content, adequacy of information, accessibility, and interaction. Four influencing factors on website users' attitudes (usability, privacy and security, adequacy of information, appearance) were identified, among which adequacy of information and appearance contribute significantly towards customer satisfaction (Liu et al., 2009).

Riseley and Schehr (2000) reported that website reliability is something that deals with customer's convenience, in the form of online information, online purchases, etc. Iwaarden et al. (2004) reported that 70% users' leave the website if the page response exceeds 12 seconds.

Allen, Mahto, and Otondo (2007) found that customers are positively engaged with a company website which has an interactive presentation of visual images, symbols, sounds, navigating functions and video clips (Cho, Phillips, Hageman, and Patten,

2009; Jiang and Benbasat, 2007; Simon and Peppas, 2004; Jiang & Benbasat, 2007). According to Jahng et al. (2007), richness is an influential factor to form positive viewer attitude towards website. Simon and Peppas (2004) posited that consumers prefer richer presentation regardless of the nature of the product.

Online service providers who deliver the promised services within promised time frame only will be considered as reliable (Syed et. al., 2008). Ruchi et al. (2010) suggested that navigation and content are the most sought after factors consumers are looking for when dealing with a web-site.

The dominant factor which influences consumer perceptions of online transactions is the website design characteristics (Shankar, 1996; Syed et. al., 2008; Ruchi et al. 2010; Ranganthan and Ganapathy, 2002). In internet or web-based transaction, compare to the voice interaction, the response on email inquiries are more important (Wolfenbarger and Gilly, 2003).

Consumers' attitudes and beliefs related to convenience, privacy and security concerns have significant effects on their intention to purchase online (Ahuja, 2003; Chiu et. al., 2009; Grace and Chia, 2009; Ranganthan and Ganapathy, 2002; Shankar, 1996; Yam et. al., 2011; Roman, 2007).

The findings of the aforementioned research studies were related to users perceptions towards the web based service, website design, web-based transaction, online shopping, etc., and very few of these studies focus on making answer to the main research question of this study to know whether there is any factor that may affect the effective management of web based service of the banking industry of Bangladesh. For reliable and valid answer to this research question, the hypothesis like 'There are factors which may affect the effective management of web based service of the Banking Industry of Bangladesh' has been developed. Now, this has to be statistically proved on the basis of the primary data.

#### 4. Methodology of the Study

The current study is the combination of both primary and secondary data collection and their analyses in which, the primary data have been collected from a recent one (1) month survey on January 2017 over the sample size of 110 respondents who all are the customers of banking service using convenience sampling method through a structured and self-administered questionnaire based extensive survey comprising of open-ended and non-forced, balanced and odd numbered non-comparative itemized questions using a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). The inferential statistical tools have been adopted to examine the factors affecting the effective management of web based service of the Banking Industry of Bangladesh. The justification of the methodology of this study may be understood from the following analysis:

**4.1 Reliability Analysis:** In the **Table 2**, the Cronbach's Alpha value of all the 11 items together is .739 which is greater than 0.7, indicating an overall higher reliability factors. Thus, it can safely be concluded by looking at **Table 2** that the reliability of this study is substantial in every perspective because the sample size and the data

collected are reliable and also the reliability is shown to be good using all the 11 items.

**Table 2: Reliability Statistics**

Cronbach's Alpha	N of Items
.778	11

**4.2 Sampling Adequacy:** Table 3 exhibits that the value of Kaiser-Meyer-Olkin (KMO) Measure is .761 which is 'good' suggesting the adequacy of the sample size for the factor analysis. Table 3 also exhibits that from the results of the Bartlett's Test of Sphericity, it is seen that the approximate chi-square statistics is 354.105 with 45 degrees of freedom, which is greater than the table value. This means that the null hypothesis that the population correlation matrix is an identity matrix is rejected by Bartlett's test of sphericity. So, the result of Bartlett's test of sphericity is significant suggesting that the population was not an identity matrix. Therefore, the Bartlett's Test of Sphericity is significant.

**Table 3: KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.716
Approx. Chi-Square	354.105
Bartlett's Test of Sphericity df	45
Sig.	.000

## 5. Analysis and Findings

Based on the survey data, the following section exhibits the analysis and findings of this study.

### Factor Analysis

**i) Objectives:** The objective of the factors analysis in this study is to determine the factors which may affect the effective management of web based service of the Banking Industry of Bangladesh.

### ii) Identification of Variables

Based on the review of literature discussed earlier, **Table 4** exhibits 10 (ten) independent variables which have been identified to conduct the factor analysis.

**iii) Sample size:** With 110 samples and 10 variables, the ratio of cases to variables is 11 to 1, which exceeds the requirement of 4:1 (Malhotra and Dhas, 2011) for the ratio of cases to variables.

**Table 4: Factors or Variables Affecting Effective Management of Web Based Service**

Code	Items	Sources
v1	Reliability	Riseley and Schehr (2000)
v2	Webpage loading speed	Iwaarden et al. (2004)
v3	Multimedia rich	Allen, Mahto, and Otondo (2007), Cho, Phillips, Hageman, and Patten (2009), Jahng et al. (2007), Jiang and Benbasat (2007), Simon and Peppas (2004)
v4	Navigation	Ruchi et al. (2010)
v5	Responsiveness	Syed et. al. (2008)
v6	Content	Ruchi et al. (2010)
v7	Website design	Martin & Camarero (2008), Syed et. al. (2008), Ruchi et al. (2010) and Ranganthan and Ganapathy (2002)
v8	Web-based transaction	Wolfenbarger and Gilly (2003)
v9	Privacy	Ahuja (2003), Chiu et. al. (2009), Grace and Chia (2009)
v10	Security	Ranganthan and Ganapathy (2002), Roman (2007), Yam et. al. (2011)

**Communalities of effective management of web based service:** The “Initial” column of the **Table 5** exhibits that the communality for each variable, v1 to v10, is 1.0 as unites. Moreover, the **Table 5** exhibits that the average communality of the variables after extraction is above 0.50 except the variables v4 and v6 which are respectively .422 and .448.

**Table 5: Communalities**

	Initial	Extraction
v1	1.000	.685
v2	1.000	.692
v3	1.000	.672
v4	1.000	.422
v5	1.000	.692
v6	1.000	.448
v7	1.000	.652
v8	1.000	.736
v9	1.000	.743
v10	1.000	.746

Extraction Method: Principal Component Analysis.

**Total Variance:** In the **Table 6**, “Initial Eigenvalues” in column B exhibits the eigenvalues in its sub column entitled “Total”. The eigenvalues for the components are exhibited in decreasing order of magnitude from component 1 to component 10. The eigenvalue for a component indicates the total variance attributed to that component. The total variance accounted for by all ten (10) components is 10.00, which is equal to the number of variables (i.e., 10). Each of the 10 variables has a sample variance in column entitled “% of Variance”, the sum of which equals the

total variance in column entitled “**Cumulative %**”. According to the eigenvalues criterion, the exact number of components is 10 which is exhibited in **Table 6**.

**Table 6: Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.273	32.729	32.729	3.273	32.729	32.729	2.592	25.925	25.925
2	1.992	19.915	52.644	1.992	19.915	52.644	2.116	21.160	47.085
3	1.223	12.233	64.878	1.223	12.233	64.878	1.779	17.793	64.878
4	.967	9.666	74.544						
5	.650	6.504	81.047						
6	.492	4.924	85.972						
7	.445	4.450	90.422						
8	.397	3.974	94.396						
9	.299	2.988	97.384						
10	.262	2.616	100.000						

Extraction Method: Principal Component Analysis.

**To Determine the Number of Factors:** In the **Table 6**, Initial Eigenvalues (Column B) exhibits that: i) the eigenvalue greater than 1.0 (default option) results in 3 (three) components being extracted, ii) from the cumulative percentage of variance accounted for, it is seen that the first 3 (three) components account for 64.878% of the variance, and that the gain achieved in going to four (4) components is marginal. Thus, the 3 (three) factors appear to be reasonable in this situation. As demonstrated in **Table 6**: the total variance explained by each component extracted is as follows: The first principal component (component 1) accounted for 32.729% of the total variance, the second principal (component 2) component, accounted for 19.915% while the third principal (component 3) component, accounted for 12.233%. The cumulative proportion of variance criterion, which says that the extracted components should together explain at least 62% of the variation, shows that the 6 extracted components cumulatively accounted for 64.878% of the variation in the data set. Scores are numbers that express the influence of an eigenvector on a specific sample.

**Table 6: Extraction Sums of Squared Loadings (Column C)** exhibits the variances associated with the factors that are retained. So, the other 7 variables have been dropped and the variances associated with them are also not explained here.

The percentage variance accounted for by a factor is determined by dividing the associated eigenvalue with the total number of factors (variables) and multiplying by 100 (Malhotra and Dhas, 2011: 596). Thus, the ‘Component 1’ accounts for a variance of 2.592, which is  $(2.592/10) \times 100$  or 25.925% of the total variance. Likewise, ‘Component 2’ accounts for  $(2.116/10) \times 100$  or, 21.160% of the total variance. Similarly, ‘Component 3’ accounts for  $(1.779/10) \times 100$  or, 17.793% of the total variance. Thus, the first 3 (three) components combined (i.e., cumulative) account for 64.878% of the total variance.

**Component Matrix:****Table 7: Component Matrix<sup>a</sup>**

	Component		
	1	2	3
v1	.365	.708	.227
v2	.314	.756	.152
v3	.432	.687	.117
v4	.457	-.184	.423
v5	.362	-.389	.640
v6	.445	-.287	.410
v7	.746	-.309	.003
v8	.817	-.024	-.259
v9	.738	-.289	-.340
v10	.741	.033	-.443

Extraction Method: Principal Component Analysis.  
a. 3 components extracted

In **Table 7 “Component Matrix”**, Component 1 is correlated with all the variables with an absolute value of factor loading greater than 0.3. Likewise, Component 2 is correlated only with v1, v2 and v3 of the 10 variables which are commonly loaded on both the components 1 and 2. Similarly, Component 3 is correlated with v4, v5 and v6 of the 10 variables which are commonly loaded with the similar variables on the component 1 but no component was found commonly loaded on the component 2. So, it is seen that the highlighted area (i.e., variables) in the various columns or components of the “Component Matrix” in the **Table 7** are overlapping and so this matrix is not an ideal option to properly interpret the components. Instead, it is difficult to interpret or seldom results in components that can be interpreted.

**Rotated Component Matrix**

Now, by comparing the **Table 8 Rotated Component Matrix** with the **Table 7: Initial or Unrotated Matrix (titled “Component Matrix”)**, it is seen that how rotation achieves simplicity and enhances interpretability. From the comparison, it is seen that only variables v1 to v3 are correlated highly with Component 1 having more than .5 cut off point. Likewise, the variables v4 to v6 correlate highly with Component 2. So, no variable commonly correlates highly with both the factors namely component 1 and 2. In the next phase, the only variable v7 to v10 correlate highly with Component 3 which are also not correlated with either of the component 1 and 2.

**To Interpret Factors**

The rotated factor/component matrix forms the basis for interpretation of the components.

**Component Loadings:** Now by combining the Column C of the Table 6 and Table 8, three components are exhibited in Table 9 which affect the effective management of web based service of the Banking Industry of Bangladesh with the eigen values

## Sarbabidya

greater than 1.0 using the factor loading of 0.50 as the cut-off point and cumulative proportion of 64.878% variance.

**Table 8: Rotated Component Matrix<sup>a</sup>**

	Component		
	1	2	3
v1	.043	<b>.824</b>	.066
v2	.035	<b>.831</b>	-.036
v3	.162	<b>.803</b>	.018
v4	.166	.103	<b>.619</b>
v5	.004	-.065	<b>.829</b>
v6	.182	.003	<b>.644</b>
v7	<b>.657</b>	-.006	.469
v8	<b>.811</b>	.213	.180
v9	<b>.839</b>	-.074	.185
v10	<b>.842</b>	.192	-.024

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

From the findings of this study through **Table 9**, it is evident that the effective management of web based service of the Banking Industry of Bangladesh is influenced for three reasons namely 'Component 1: Design for secured transaction' 'Component 2: Enriched and reliable content and speed', and 'Component 3: Interactive and responsive'.

The following is a brief discussion of each component in the order of its contribution to the total variance.

The **Table 9** exhibits three components of effective management of web based service of the Banking Industry of Bangladesh with the eigen values greater than 1.0 using the factor loading of 0.50 as the cut-off point and cumulative proportion of 64.878% variance.

The Component 1 contains 4 (four) variables from v7 to v10 which exhibits the significant influence on the effective management of web based service of the Banking Industry of Bangladesh. Since, all these variables are related to the effective management of web based service of the Banking Industry of Bangladesh covering the variables like website design, web-based transaction, privacy and security, the component can be labeled as 'Secured design for transaction and service'.

The Component 2 contains 3 (three) variables from v1 to v3 which exhibits the significant influence on the effective management of web based service of the Banking Industry of Bangladesh. Since, all these variables are related to the effective management of web based service of the Banking Industry of Bangladesh from the reliability, webpage loading speed and multimedia rich, the component can be labeled as 'Enriched and reliable content and speed'.

**Table 9: Component Loadings**

Name of Components	Variables	Component Loading*	Eigen value**	Component Interpretation (% of Variance Explained)**
<b>Component 1:</b> Design for secured transaction	v7: website design	.657	1.779	17.793
	v8: web-based transaction	.811		
	v9: privacy	.839		
	v10: security	.842		
<b>Component 2:</b> Enriched and reliable content and speed	v1: reliability	.824	2.592	25.925
	v2: webpage loading speed	.831		
	v3: multimedia rich	.803		
<b>Component 3:</b> Interactive and responsive	v4: navigation	.619	2.116	21.160
	v5: responsiveness	.829		
	v6: content	.644		
<b>Total Variance</b>				<b>64.878</b>

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations

The Component 3 contains 3 (three) variables from v4 to v6 which exhibits the significant influence on the effective management of web based service of the Banking Industry of Bangladesh. Since, all these variables are related to the effective management of web based service of the Banking Industry of Bangladesh covering the variables like navigation, responsiveness and content, the component can be labeled as 'Interactive and responsive'.

From the above factor analysis and findings of this study, it is evident that effective management of web based service of the Banking Industry of Bangladesh is ensured through three (3) reasons namely 'Design for secured transaction', 'Enriched and reliable content and speed' and 'Interactive and responsive'. Components loading of the variables and percentage (%) of variance of the components as exhibited in **Table 9** rejects the null hypothesis ( $H_0$ ): There is no factor which may affect the effective management of web based service of the Banking Industry of Bangladesh and proved the alternative hypothesis ( $H_a$ ): There are factors which may affect the effective management of web based service of the Banking Industry of Bangladesh. Thus, the model proposed in the earlier section is validated.

## 6. Conclusion and Implications

Web based services of the banking industry can effectively be managed if the concerned engineering department can ensure: i. appropriate design for web-based secured transaction with much privacy and security, ii. enriched and reliable content and high speed, iii. interactive and responsive content with proper nnavigation facilities.

From the light of analytical findings, it is evident that the adoption of the web based management system enables the customers to get updated and informative content with reliable statistics such as the latest rate of interest on bank deposit, various schemes, etc. The use of multimedia including video and audio presentation on

various services of the concerned bank may ease the process of banking. Such convenience stands to be very interactive when the navigation on various pages or sections within the same page of a website becomes faster and easier. This is further accelerated with the prompt response having detailed and supportive content by the concerned bank officials in reply to the query, complain, or feedback submitted by the customers via fulfilling the respective forms. However, confidence of the customers gets high when the design of the website is found very much secured to maintain confidentiality and privacy of their transactions. So, it is proved from the statistical inferences of the factor analysis that three factors of components namely 'Component 1: Design for secured transaction' 'Component 2: Enriched and reliable content and speed', and 'Component 3: Interactive and responsive' can ensure effective management of web based banking service. The industries like the banking industry of Bangladesh if focuses on developing its web based service by assuring the three components, this may ensure their business success. This paper will add value to the area of research by suggesting the ways of mitigating the identified gaps in each of the 10 aspects of web-based banking where the concerned banks need to pay much attention and take necessary measures so that they can ensure growth of the banking industry with the robust and easy to use technologies and technical know-how.

The present study is significant and deserves credit because this paper incorporates around 10 variables from multifarious studies which have direct influence on the effective management of web based banking service. Thus, this study fulfills criterion of both qualitative and quantitative analyses. Moreover, the research question developed in this paper is new in nature which was not raised in the earlier studies. The present paper is also unique by developing an interface between technology and banking. Moreover, both secondary and primary data are from reliable sources and have proved their worth through higher reliability and validity test scores. The current study is not only very much significant from the results of higher reliability and validity scores but also bears importance of web based banking service in this very age of digital technologies which has made banking transactions more convenient than ever before. However, the present study is not free from limitation. The major limitation of the present study is that none of the earlier study focused on more than one or few variables as factors of such services. This means that there is paucity of limited research findings on some of the identified factors.

From the facts of the above findings and assessment, it is statistically exhibited that effective management of web based banking service can enhance customer satisfaction in one hand and increase the business volume of the banks by increasing their transactions volumes on the other hand. Thus, the paper will enable the banking industry in Bangladesh with necessary course of actions which will enable the academia in developing its knowledge centric theory based on proven practice. From the literature review in integrated form and factor analysis through PCA, it is evident that the identified components can further be used and developed for similar other researches.

## References

- Ahuja, M.K., Gupta, B., Raman, P. (2003) An empirical investigation of online consumer purchasing behavior, *Communication of the ACM*, Vol. 46 No.12, pp.145-51.
- Ali, M. M. and Akter, N. (2010), 'E-Business with special reference to on line banking of Bangladesh: An Analysis', paper presented at the 17th Biennial Conference on "The economy at the golden Jubilee of war of liberation: What type of Bangladesh we would like to see?" organized by Bangladesh Economics Association held on 8-10 February at Osmani Memorial Auditorium and Institution of Engineers, Bangladesh, Dhaka.
- Allen, D. G., Mahto, R. V, & Otondo, R. F. (2007), 'Web-based recruitment: effects of information, organizational brand, and attitudes toward a Web site on applicant attraction', *The Journal of Applied Psychology*, Volume 92, No. 6, pp. 1696–708
- Chiu, C. M., Chang, C. C., Cheng, H. L. and Fang, Y.H. (2009), 'Determinants of customer repurchase intention in online shopping', *Online Information Review*, Volume 33, No.4, pp.761-84.
- Cho, C. H., Phillips, J. R., Hageman, A. M., & Patten, D. M. (2009), 'Media richness, user trust, and perceptions of corporate social responsibility: An experimental investigation of visual web site disclosures', *Accounting, Auditing & Accountability Journal*, Volume 22, No. 6, pp. 933–952
- Grace and Chia (2009), 'Factors influencing satisfaction and loyalty in online shopping: and integrated model', *Online Information Review*, Volume 33, No. 3, pp. 458-475.
- Iwaarden, J. V., Wiele, T. V. D., Ball, L., & Millen, R. (2004), 'Perceptions about the quality of websites: A survey amongst students at Northeastern University and Erasmus University', *Information & Management*, Volume 41, pp. 947–959
- Jahng, J., Jain, H., & Ramamurthy, K. (2007), 'Effects of interaction richness on consumer attitudes and behavioral intentions in e-commerce: Some experimental results', *European Journal of Information Systems*, Volume 16, No. 3, pp. 254–269
- Jiang, Z. and Benbasat, I. (2007), 'Investigating the influence of the functional mechanisms of online product presentations', *Information Systems Research*, Volume 18, No. 4, pp. 454–470
- Jahangir, N. and Begum, N. (2008), 'The role of perceived usefulness, perceived ease of use, security and privacy, and customer attitude to engender customer adaptation in the context of electronic banking', *African Journal of Business Management*, Vol. 2, No. 1, pp. 32-40
- Rahman, Atiur (2010), 'Digital Bangladesh Bank', *The Daily Star*, January, 13
- Ranganthan, C. and Ganapathy, S. (2002), 'Key dimensions of business-to-consumer Web sites', *Information and Management*, Volume 39, pp. 457-465.
- Riseley, M., Schehr, D. (2000), 'Priceline's problems result from poor execution in a niche market', *Gartner First Take*, 8 November
- Roman, S. (2007), 'The ethics of online retailing: a scale development and validation from the consumers' perspective', *Journal of Business Ethics*, Volume 72, No.2, pp.131-48.
- Ruchi, Ashish and Gupta. (2010), 'To study the impact of website factors on consumer online buying behaviour in India', *IJMMR*, Volume1, No. 1, pp. 1-16.

## Sarbabidya

- San Martín, S., and Camarero, C. (2008), 'Consumer trust to a web site: moderating effect of attitudes toward online shopping', *Cyber psychology & Behavior*, Volume 11, No. 5, pp. 549–54
- Simon, S. J., & Peppas, S. C. (2004), 'An examination of media richness theory in product web site design: An empirical study', *Info*, Volume 6, No. 4, pp. 270–281
- Syed, Zaharah, Hishamuddin and Nilufar (2008), 'Young consumers online shopping: an empirical study', *Journal of Internet Business*, Issue 5, pp. 81-98.
- Wolfenbarger, M. and Gilly, M. C. (2003), 'eTailQ: Dimensionalizing, measuring and predicting etail quality', *Journal of Retailing*, Volume 79, Issue 3, pp. 183-198
- Yam B. Limbu, Marco Wolf and Dale L. Lunsford (2011), 'Consumers' perceptions of online ethics and its effects on satisfaction and loyalty', *Journal of Research in Interactive Marketing*, Volume 5, No. 1, 2011, pp. 71-89