



Problems and Prospects of Electronic Banking in Bangladesh: A Case Study on Dutch-Bangla Bank Limited

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Abstract: The main objective of this report examines the present status, problems and prospects of E-banking in Bangladesh. This study has been done mainly based on primary and secondary sources of data or information, which included different publications, journals and different books. The primary data is collected from respondents through structured interview schedule. To accomplish this report we have implemented the interviewing approach on Dutch-Bangla Bank Limited. Bangladesh, particularly who avail the electronic banking services. Dutch-Bangla Bank is acting as a pioneer in this sector. Customers who were habituated with e-banking thinks that e-banking services were relatively good than manual system, but they not satisfied with the quality of services and bank personnel behavior to that extent. There were total 11 questions and the sample size of 100 registered e-banking clients of DBBL. Collected data were summarized and analyzed by using SPSS version 22, MINITAB 17 and Microsoft Excel. This paper addressed significant gaps in existing knowledge about the electronic banking and landscape. The results showed that e-banking serves several advantages to Bangladeshi banking sector, however, this study also observed that the customers of DBBL have not enough knowledge regarding e-banking which is rendering by banking sector in Bangladesh. This study will help to know how one bank can improve the level of electronic banking services in Bangladesh and what were the potential issues or services that should be introduced in society to facilitate the customer in a better way and to complete their rivals in banking industry as a whole.

Keywords: Problems, Prospects, Electronic Banking, Performance, Analysis, Bangladesh

1. Introduction

Bangladesh is one of the largest densely populated countries. The economy of Bangladesh is mainly based on agriculture but there are so many exportable items like agricultural products and other finished goods like ready-made garments, leather, medicine, tea, fish etc. More than one million peoples of Bangladesh are working abroad and send remittance through banking channel.

In banking industry, information technology is the major factor for future development of financial services industry. It is based on sharing of information, which mainly depends on

information and communication technology for acquiring, analyzing and delivering data to all relevant users. The information technology enables the banking sector competitive to differentiate its offer from competitors by making it a market leader. So, it is important for information analysis for banking industry. That is why, banking sector are trying to innovate and update their products and marketing strategies for meeting the requirement and demand of the prospective customers. Information technology creates and provides better services to banking industry by ensuring maximum security level of banking industry. (Rahman *et al*, 2012)

The banking industry is a vital and prominent sector in Bangladesh which contributes a mentionable contribution in the mainstream of economy. So, it is necessary to develop and update it by introducing maximum information technology support which enables it a maximum service providing agency of Bangladesh. The desire of customer is to get service at near to hand. That means the service would be easily accessible to make transactions wherever, whenever, and however they want. So, the concept of electronic financial services, more commonly is known as e-banking. As a result many conventional and state owned banks are adopting information technology support to develop their infrastructure so that they can provide better e-banking services to their customers. Though, private commercial banks adopt information technology from the very beginning of their establishment. So, it helps their day-to-day transactions which meets the expectations its internal users and external users. It also helps to improve the administrative systems, better information tracking, and time and cost effectiveness. So, it is necessary to adopt e-banking for banking industry which will offer the major opportunities in terms of competitive advantages. Not only it improves efficiency and operational effectiveness within the company but also develops a stronger and more durable business relationship with its customers. (Rahman *et al*, 2012)

Uddin *et al* (2016) recommended that various measures should be put in place to make e-banking system smooth, effective and more secure. They concluded that e-banking has become important phenomenon in the banking industry and it will continue as more progress and innovations are made in information technology. Islam M M (2015) reported that Internet banking is modern technology based computerized system of providing banking systems to client with low cost and quick services. Though Bangladesh was comparatively a late adopter but now almost all the banks are providing internet banking to their customers.

Islam (2015) observed that the following recommendations and strategies may be applied to overcome the problems of internet banking in Bangladesh To provide more in-depth information about bankers' opinion based on scores as computed through weights assigned based on degree of satisfaction/agreement or disagreement. A score of 3 would indicate strongly agreed position, 2 to 2.99 quite agreed positions and up to 1 at to some extent satisfactory position if the numbers are positive and vice-versa.

In India Kaur, Jasveen and Kaur, Baljit (2013), in a study shows that there is no significant difference in facilities determining the customers' usage of internet banking services of Public-sector, Private-sector and Foreign Banks in India. In Malaysia Hari Mohan (2013), conducted a study and used Technology Acceptance Model (TAM) and considered factors were performance expectancy, effort expectancy, social influence, facilitating condition, trust, behavioral intentions. The study showed that self-efficiency and trust are not related positively with the intention towards online

banking while perceived ease of use influences the intention towards online banking.

The business of banking has changed by the developments in technology. E-banking is now a global phenomenon. It is an invaluable and powerful tool driving development, supporting growth, promoting innovation and enhancing competitiveness the primary stages of the e-banking were the Electronic Fund Transfer System, uses computer and electronic technology as a substitute for cheques and other paper transactions. The main elements of the EFTS were the Automated Teller Machine, Point of Sale (POS), Terminal and Automated Clearing House (ACH). As an Internet based technology, e-banking is new and a quite unfamiliar for some people in Bangladesh due to the digital divide and the different level of internet experience and environments. E-banking services have been available in Bangladesh since 2001. The banking industry believes that by adopting new technology, the banks will be able to improve customer service level and tie their customers closer to the bank (Hasan *et al*, 2013). The general people, local traders, manufacturer, remittance senders and international traders can depend on information technology based banking. Because of it saves not only time and cost but also quick delivery of services with full security.

1.1. Objectives of the Study

The objectives of the study were:

1. To present the current scenario and extent of E-banking in Bangladesh.
2. To measure the performance of information technology based banking in Bangladesh.
3. To determine the adoption level of people in information technology based banking in Bangladesh.
4. To suggest measures for sustainable development of E-banking in Bangladesh.

1.2. Rationale of the Study

Today's world is service oriented in every sector. Those who were giving much more services rather than others were giving; he will be well ahead of competition because of getting better competitive advantages. There were 56 different banks working together in Bangladesh. The competition is going up day by day by giving better services and they were trying to develop their own services every now and then. Electronic banking is known to us since 1990. E-banking services have been available in Bangladesh since 2001. Electronic banking has got tremendous importance in banking sector and banking customer as well. Understanding the reasons for the lack of such technological innovation in developing countries such as Bangladesh will develop a fruitful research. The aim of this report is to look at the emergence, advantages and acceptance of electronic banking in Bangladesh and the researcher tries to represent of Electronic Banking in the context of Dutch Bangla Bank Ltd.

2. Methodology of the Study

The report mainly focuses on the problems and prospects of Electronic Banking in Bangladesh through Dutch-Bangla Bank Limited (DBBL). The study covered different branches of Dutch-Bangla Bank Limited, other private commercial banks, foreign bank and state-owned commercial bank which mainly situated in the capital city of Dhaka in Bangladesh. Maximum numbers of the respondent were situated in the capital city of Dhaka in Bangladesh. The data was collected from respondents through structured interview schedule in July to August, 2015.

Sources of Data: Both primary and secondary data have been used to prepare the report. Primary data was collected from 100 respondents through interview by a structured interview schedule. During the study period respondents were clients of Dutch-Bangla Bank Limited for relevant products. Secondary data comes from different published sources like research reports on Electronic Banking, Bank's websites and Bangladesh Bank's website etc. Besides, internet has been used as another source of information.

Data Analysis: Collected data was analyzed from different perspectives of research objectives by using Microsoft Excel, SPSS version 22, and MINITAB 17.

3. Current Scenario and Adoption Level of E-Banking in Bangladesh

Bangladesh is far behind to reach the expected level of global banking system as a third world developing country. According to a report published in The Daily Star (4th April, 2010) Bangladesh ranked 118th in the global Network Readiness Index in 2009-10 up from 130th a year ago, showing an upward trend in the information and communication technology sector.

Electronic banking is relatively new concept in Bangladesh. Formerly only the foreign banks operating in Bangladesh like Standard Chartered Bank, HSBC, etc provided it. These foreign banks managed to gain competitive advantage with the introduction of electronic banking for the first time in Bangladesh. As result the local commercial banks started to loose their market to these foreign commercial banks. So they reacted very quickly. First time it was combined, now some of the banks were offering Electronic-banking services even solely. Eastern Bank Ltd. is the leading local commercial banks in Bangladesh to offer world-class electronic banking services.

Security measures of e-banking

The security of a system is the extent of protection against some unwanted occurrence such as the invasion of privacy, theft and the corruption of information or physical damage. At this system is developed through the internet there is a big chance of hacking through our system. Current browsers counter security threats with a network communication protocol called secured sockets layer (SSL). SSL is a set of rules that tells computers the step to take to improve the security level of the communication.

Customers' Response

Out of one hundred customers' who have been using

online banking system, following results have been gathered from the questionnaire through using snowball sampling technique. In following table Customers' Response who has been using electronic banking services (percent of respondents who expressed "Yes" comment) is presented.

3.1. Use of Electronic Banking

Table 1. Electronic Banking used by Gender.

Cross tabulation between Use of Electronic Banking and Gender				
		E-Banking Use		Total
		Yes	No	
Gender	Male	69	14	83
	Female	12	5	17
Total		81	19	100

Source: Field survey, 2015.

We observed from the above frequency table that out of 100 respondents, there were 83 male and 17 female respondents. We also observed that 81 percent people use e-banking services who were mainly young people and 19 percent doesn't use these services who mainly near about or above the age of 50 years. Out of 83 male respondents 69 male respondents used e-banking services and 14 male respondents didn't use these services. Out of 17 female respondents 12 female used e-banking but only 5 female respondents didn't use e-banking.

3.2. Electronic Banking Easy to Operate

We observed that out of 100 respondents 64 percent people think that electronic banking easy to operate and 36 percent people think electronic banking is not easy to operate. The result is shown in the graph:

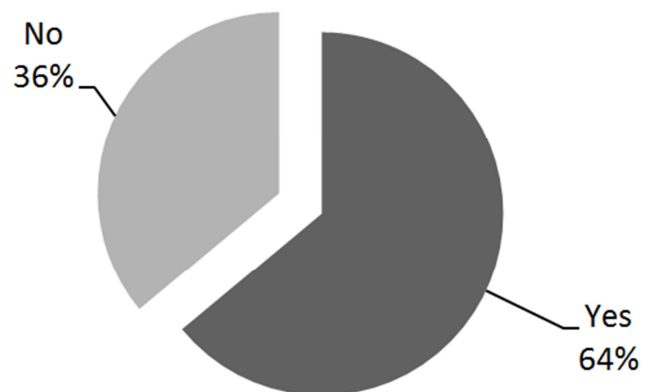


Figure 1. Electronic banking easy to operate.

3.3. E-Banking Use by Age Level

We observed that most of the respondents were between 25 to 35 age levels that is 58 percent, 14 percent from 35 to 40 years age, 10 percent from 45 to 50 years age and 9 percent from 20 to 25 years age. Most of the respondents were young people. The result is shown in the following table:

Table 2. Cross table of E-Banking use and Age Level.

Age	E-Banking use		Total
	Yes	No	
20 - <25	9	0	9
25 - <30	24	1	25
30 - <35	32	1	33
35 - <40	13	1	14
40 - <45	1	6	7
45 - <50	2	8	10
50 - <55	0	2	2
Total	81	19	100

Source: Field survey, 2015.

3.4. Electronic Banking vs. Manual Banking

The respondents given their opinion regarding the facilities of electronic banking vs. manual banking. A 5 Point Likert scale was used for each statement ranging from "Strongly disagree" to "Strongly agree".

The result is shown in the following Pie chart:

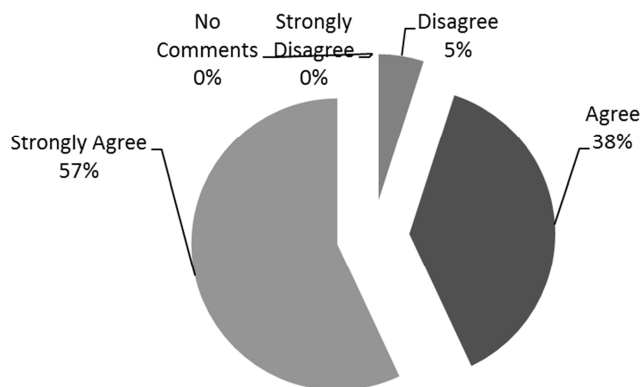


Figure 2. Electronic Banking is better than Manual Banking.

We observed from the above graph that out of 100 respondents, 57 percent respondents were strongly agreed about electronic banking was better than manual banking, 38 percent respondents were concerned agreed about electronic banking but only 5 percent respondents were concerned disagreed about electronic banking was better than manual banking.

3.5. Electronic Banking Provides Good Customer Service

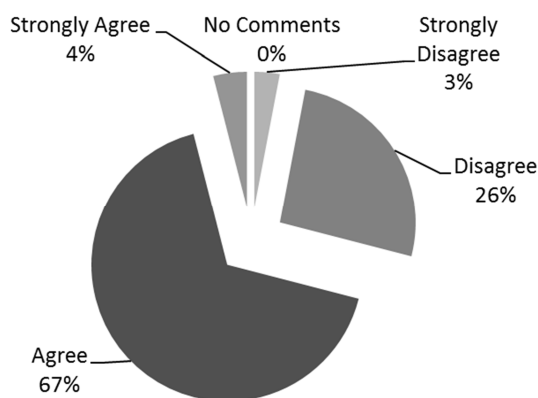


Figure 3. Electronic Banking provides good Customer Service.

We observed from the data that out 100 respondents, 67 percent respondents were agreed about electronic banking provides good customer service, 26 percent were disagreed, only 3 percent strongly disagreed and 4 percent strongly agreed. The result is shown in the following pie-chart:

3.6. Electronic Banking Provides Just in Time Services

Table 3. Cross table of Electronic Banking vs. Just in Time Service.

Electronic Banking	Just in Time Service			Total
	Disagree	Agree	Strongly Agree	
Yes	9	69	3	81
No	8	11	0	19
Total	17	80	3	100

Source: Field survey, 2015.

From the above cross table, we observed that out of 100 respondents 81 respondents were use electronic banking and 19 respondents were not use electronic banking. Among the respondents 17 percent respondents were disagreed about electronic banking provides just in time service, 80 percent were agreed about just in time service and 3 percent were strongly agreed. We also observed that among 80 percent agreed respondents 69 percent were use electronic banking and 11 percent did not use electronic banking.

3.7. Security & Privacy Maintained in E-Banking

We have observed from the data that out of 100 respondents 46 percent were agreed about security & privacy in electronic banking, 12 percent were strongly agreed, 29 percent were disagreed, and 13 percent respondents were strongly disagreed.

The result is shown in the following Pie chart:

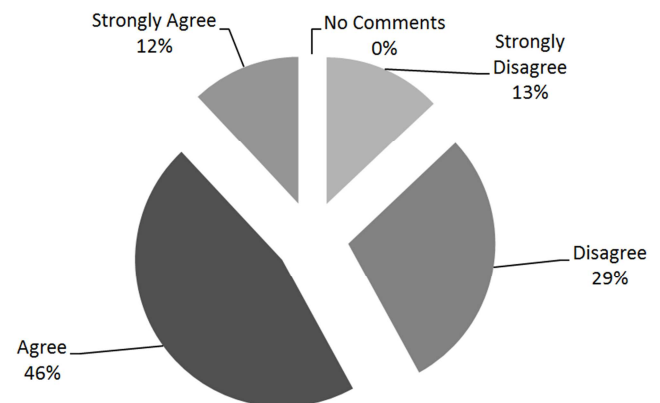


Figure 4. Security & privacy maintained in e-banking.

3.8. Infrastructure Development of E-Banking

We observed from the data that out of 100 respondents 76 percent were agreed about Infrastructure development is not satisfactory in electronic banking in Bangladesh, 15 percent were strongly agreed, and 9 percent respondents were disagreed.

The result is shown in the following Pie chart:

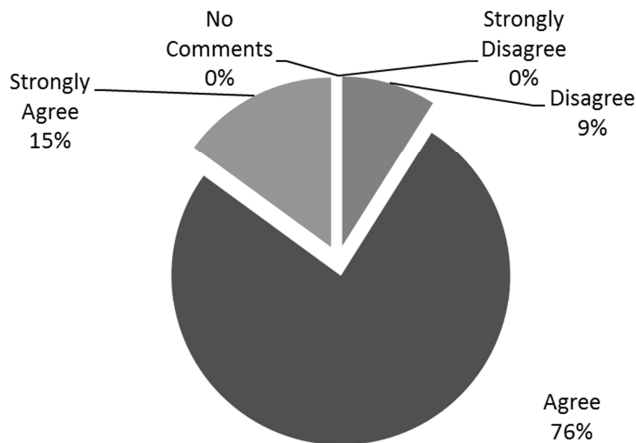


Figure 5. Infrastructure development is not satisfactory in E-Banking.

3.9. Knowledge is Positively Related with E-Banking

We observed that 68 percent respondents were agreed about knowledge is positively related with electronic

banking, 18 percent were strongly agreed, and 14 percent were disagreed. The result is shown in the following Pie chart:

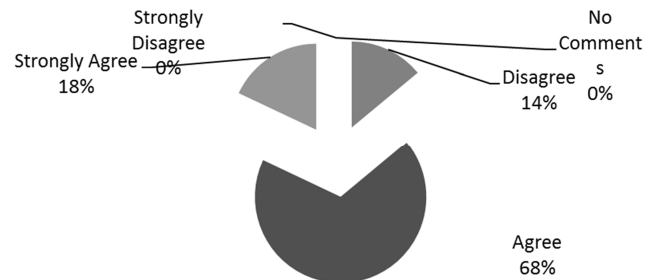


Figure 6. Knowledge is positively related with E-Banking.

3.10. Use of E-Banking Products

We observed that maximum people use both ATM and cheque book (almost 35 percent), only ATM (almost 27 percent), and all of these three ATM, Cheque Book and Mobile Banking (almost 19 percent) services.

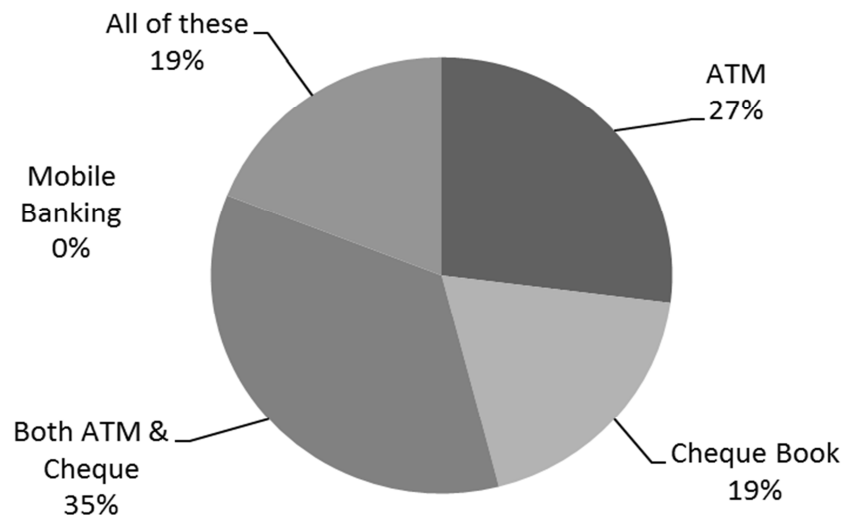


Figure 7. Pie charts of the use of E-Banking products.

4. Statistical Analysis for Measuring Adoption and Associations of Variables

4.1. Chi-Square Test for Association of E-Banking and Fraud-Forgery

Table 4. Association of E- banking and Fraud-forgery.

E-Banking use	Fraud-Forgery Increased				Total
	Agree		Strongly Agree		
	Observed	Expected	Observed	Expected	
Yes	27	21.87	54	59.13	81
No	0	5.13	19	13.87	19
Total	27	27	73	73	100

Hypothesis Testing

We want to test the association of Chi-Square between the use of electronic banking & fraud-forgery.

Let, H_0 : There is no association between use of electronic banking and fraud forgery.

and H_1 : There is association between use of electronic banking and fraud forgery.

The level of significance is $\alpha = 0.05$

The test statistic of Chi-Square is, $\chi^2 = \sum \frac{(f_o - f_e)^2}{f_e}$ with $(r-1)(c-1)$ degrees of freedom.

The degrees of freedom are found by:

$$df = (r-1)(c-1) = (2-1)(2-1) = 1$$

Where, f_o is the observed frequency.

f_e is the expected frequency.

r is the number of row in a category.

c is the number of column in a category.

The computed value of Chi-Square is $\chi^2 = \sum \frac{(f_o - f_e)^2}{f_e} = 8.676$ [by using MINITAB]

The critical value for 1 degrees of freedom and the .05 level of significance is 3.841.

Decision rule:

4.2. Chi-Square Test for Association of E-Banking and Security & Privacy

Table 5. Association of Electronic banking and Security & Privacy.

Electronic Banking	Security & Privacy								Total
	Strongly Disagree		Disagree		Agree		Strongly Agree		
	Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected	
Yes	10	10.53	17	23.49	42	37.26	12	9.72	81
No	3	2.47	12	5.51	4	8.74	0	2.28	19
Total	13	13	29	29	46	46	12	12	100

Source: Field survey, 2015.

Hypothesis Testing

We want to test the association of Chi-Square between electronic banking and security & privacy.

Let, H_0 : There is no relationship between electronic banking and security & privacy.

and H_1 : There is relationship between use of electronic banking and security & privacy.

Assume the level of significance is $\alpha = 0.01$

The test statistic of Chi-Square is, $\chi^2 = \sum \frac{(f_o - f_e)^2}{f_e}$ with $(r-1)(c-1)$ degrees of freedom.

The degrees of freedom are found by:

$$df = (r-1)(c-1) = (2-1)(4-1) = 3$$

Where, f_o is the observed frequency.

f_e is the expected frequency.

4.3. Chi-Square Test for Association of E-Banking and Knowledge

Table 6. Association of Electronic Banking and Knowledge.

Electronic Banking	Knowledge						Total
	Disagree		Agree		Strongly Agree		
	Observed	Expected	Observed	Expected	Observed	Expected	
Yes	12	11.34	54	55.08	15	14.58	81
No	2	2.66	14	12.92	3	3.42	19
Total	14	14	68	68	18	18	100

Source: Field survey, 2015.

Hypothesis Testing

We want to test the association of Chi-Square between electronic banking and Knowledge.

Let, H_0 : There is no relationship between electronic banking and Knowledge.

and H_1 : There is relationship between use of electronic banking and Knowledge.

Assume the level of significance is $\alpha = 0.05$

The test statistic of Chi-Square is, $\chi^2 = \sum \frac{(f_o - f_e)^2}{f_e}$ with $(r-1)(c-1)$ degrees of freedom.

The degrees of freedom were found by:

$$df = (r-1)(c-1) = (2-1)(3-1) = 2$$

Where, f_o is the observed frequency.

The decision rule is to reject null hypothesis at the .05 level of significance since the computed value of chi-square is greater than the critical value of 3.841. We conclude that there is association between electronic banking and fraud-forgery.

r is the number of row in a category.

c is the number of column in a category.

The computed value of Chi-Square is $\chi^2 = \sum \frac{(f_o - f_e)^2}{f_e} = 15.566$ [by using MINITAB]

The critical value for 3 degrees of freedom and the .01 level of significance is 11.345.

Decision rule:

The decision rule is to reject null hypothesis at the .01 level of significance since the computed value of chi-square is greater than the critical value of 11.345. We conclude that there is relationship between electronic banking and security & privacy. Similar results obtained by Zaman F. and P. Chowdhury (2012).

f_e is the expected frequency.

r is the number of row in a category.

c is the number of column in a category.

The computed value of Chi-Square is $\chi^2 = \sum \frac{(f_o - f_e)^2}{f_e} = 0.377$ [by using MINITAB]

The critical value for 2 degrees of freedom and the .05 level of significance is 5.991.

Decision rule:

The decision rule is to accept the null hypothesis at the .05 level of significance since the computed value of chi-square is less than the critical value of 5.991. We conclude that there is no relationship between electronic banking and Knowledge. Similar results obtained by Ali, 2010 and Sarker *et al*, 2015.

4.4. Regression Analysis of the Financial Strength of DBBL

We want to measure the financial strength of the relationship between the independent variables and the

dependent variable. There were five years financial data of DBBL. We want to draw the multiple regression model of Net Profit versus Revenue, Expenses, Assets, and Loans and Advances. The following data were:

Table 7. Five year's Financial Data of DBBL.

Particulars	2010	2011	2012	2013	2014
Total Revenue (m), X ₁	10610	14114.6	18213.1	20050.6	20741.8
Total Expenses (m), X ₂	6409	9334.8	13007.5	15467	15417.4
Total Assets (m), X ₃	101181.6	123267	155918.6	185537.4	215993.5
Loans & Advances (m), X ₄	67657.7	79660.7	91648.9	106422.8	124423
Net Profit after Tax (m), Y	2002.9	2154.9	2314.1	2000.8	2206.6

Source: Annual report of Dutch-Bangla Bank Limited, 2014. [11]

The general form of the multiple regression equation with four independent variables is:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4$$

Where,

Y is dependent variable that is net profit after tax,

a is the Y-intercept,

b₂ is the coefficient of X₂,

b₁ is the coefficient of X₁,

b₃ is the coefficient of X₃,

b₄ is the coefficient of X₄,

X₂ is the total expenses,

X₄ is the loans and advances.

X₁ is the total revenue,

X₃ is the total assets, and

Results from MINITAB:

Regression Analysis: Net Profit versus Total Revenue, Total Expenses, Total Assets, Loans and Advances Coefficients

Table 8. Regression analysis results.

Term	SE	Coef	Coef	T-Value	P-Value	VIF
Constant		832.5	*	*	*	
Total Revenue (m)		0.3972	*	*	*	177.39
Total Expenses (m)		-0.4079	*	*	*	216.63
Total Assets (m)		0.007165	*	*	*	661.07
Loans and Advances (m)		-0.01707	*	*	*	456.29

Source: Field survey, 2015.

Regression Equation

Net Profit after Tax (m) = 832.5 + 0.3972 Total Revenue (m) - 0.4079 Total Expenses (m) + 0.007165 Total Assets (m) - 0.01707 Loans and Advances (m)

The Regression equation is:

$$Y = 832.5 + 0.3972X_1 - 0.4079X_2 + 0.007165X_3 - 0.01707X_4$$

that is, Net Profit after Tax = 832.5 + 0.3972 × Total Revenue - 0.4079 × Total Expenses + 0.007165 × Total Assets - 0.01707 × Loans and Advances.

The intercept value is 832.5 if the value of all independent variable is zero then net profit is 832.5.

The value of b₁ is 0.3972 indicates that holding other factors remaining constant, if the revenue increases by 1 unit of measurement, the net profit would go up by 0.3972 unit of measurement.

The value of b₂ is -0.4079 indicates that holding other factors remaining constant, if the expenses increases by 1 unit of measurement, the net profit would go down by 0.4079 unit of measurement.

The value of b₃ is 0.007165 indicates that holding other factors remaining constant, if the assets increases by 1 unit of measurement, the net profit would go up by 0.007165 unit of measurement.

The value of b₄ is -0.01707 indicates that holding other factors remaining constant, if the loans and advances increases by 1 unit of measurement, the net profit would go down by 0.01707 4 unit of measurement. Similar results obtained by Sarker *et al*, 2015.

5. Problems and Prospects of E-Banking in Bangladesh

As empirical evidence here a SWOT Analysis can be an effective measure. For analyzing the performance of the E-Banking in Bangladesh the following SWOT Analysis of DBBL is considered:

a. Strengths

- DBBL providing the all services of E-Banking.
- Largest banking service provider in the commercial bank.
- Qualified, hard working & dedicated human resources.
- Gets advantage for ATM card, and customers can save time and avoid hassles.
- E- Banking is convenient as the service is available all the tome at just a click away.

b. Weaknesses

- Low deposit rate and minimum balances were too

high.

- Non functioning ATM machines and shortage of money in ATM.
- The system may have a problem of security breakdown which refers to the problem of identification of customers who's initiating transaction.
- Internet infrastructure in our country is not satisfactory and supportive to provide all time access to web.

c. Opportunities

- A person is able to withdraw or deposit money in any branch of the bank he has account with the bank. Moving to E- Banking gives an edge in such cases.
- If reducing current fees & charges of internet banking and positioning attractively, so DBBL can attract more corporate client.
- All types of internet services were being appreciated and applied by people of different walks as this eases the activities. So, such an attractive offer package provided by E- Banking will be popular everywhere very soon.

d. Threats

- People have concern about security & privacy; they like to feel money with their hand; they actually don't believe in virtual money transfer.
- Furthermore, the new comers in private banking sector were also coming up with very competitive products.
- Despite the presence of online internet service in Bangladesh, its scope is underutilized. The reasons include high service charges, lack of awareness, poor telecommunication systems, government policy, low buying power of potential clients and lack of institutional support.

As in Bangladesh, The strengths and weaknesses were the internal factors of the banks in operation of E- Banking while the opportunities and threats were the external factors.

6. Challenges and Constraints of E-Banking

6.1. Infrastructural Barriers

Infrastructural barriers were one of the most important challenges for e-banking in Bangladesh. Here, there is not enough infrastructural support for providing efficient e-banking services. In our country, telecommunication services were not strong, communication bandwidth is weak, software is not available in the country and hardware for establishing ATM booth is costly.

6.2. Knowledge Barriers

E-business is still not very much progressed in Bangladesh. Mass awareness is not feasible. The country faces problem of developing trained human resources. There were lack of technological knowledge among the managers, employees, and customers of bank.

6.3. Legal and Security Barriers

In Bangladeshi circumstance lack and limitation of

regulation of law is one of the acute obstacles to e-banking. On the other hand, in an underdeveloped country like ours, frauds were gaining significant potential which indicates a negative output in our local e-banking sector.

Besides these barriers, our courts doesn't consider electronic documents as evidence, so people with a high risk of transaction were not much interested to get e-banking facilities. Technical issues were also highly connected to e-banking, but in our country technical securities were very weak and in a high risk of hacking in each moment. So, customer's trust in e-banking is still beyond imagination in Bangladesh

6.4. Socio-cultural and Economic Barriers

As mentioned earlier, most of the people were not educated in Bangladesh. So, people were not willing to break the traditional way of conventional banking and always hold a negative perception regarding e-banking. Another important issue is banks employees also hold a negative outlook to e-banking thinking of uncertainty of their jobs. On the other hand many traditional customers prefer paper money and receipts over e-documents for their ignorance and weakness in English language. In Bangladesh, economic barriers were one of the most challenges for e-banking. For providing e-banking services to the customer, it needs for heavy investment regarding new infrastructures. So it is not easy for a bank to invest huge amount of money for infrastructure of e-banking. In our country, internet cost is also high that is an acute obstacle of e-banking. And our average per capita income is also very low so that most of the people does not have the ability to buy the communication equipment like computer, laptops, smart phone.

6.5. Lack of Awareness and Human Capital

E-business is still not very much progressed in Bangladesh. Mass awareness is not feasible. The country faces problem of developing human-capital. Without preparing human capital at the level of international standard, we cannot be able to compete in global market and successful e-business cannot be possible.

6.6. Unsatisfying Services and Customer Relationship

Nationalized commercial banks and specialized banks were lagging behind of online banking services. Moreover, customers were not satisfied with the quality of the services. They were not also very happy with the behavior of the bank personnel. However, it reveals that e-business especially with the help of online banking can manage economy of Bangladesh in a far better way as customer relationship management increases.

6.7. Unavailability of Locally Produced Software

Local Banking software should be developed properly and must have greater accessibility within the country and outside the country. Moreover, to produce hardware especially computer and its accessories, local entrepreneurs were not taking any sort of strategic planning.

6.8. *Erstwhile Technology*

Bangladesh Bank should adopt latest technology but due to lack of vision they were adopting old technology i.e. introduction of MICR for Bangladesh Bank automation procedure. MICR system should be substituted by cheque truncation system.

6.9. *Limited Number of Online Customer Due to High Cost*

The number of customers taking banking services does not capable to bear the cost of additional equipments like computer, computer accessories, Internet etc. from their own organization or at home. Biometrics should be more strengthened. Using Internet facility still very costly and people has little knowledge in operating computers. A few numbers of cyber café is available but for banking purpose customers do not feel safe to use these facilities. As a result total numbers of customers who were habituated in online banking systems were limited. In these circumstances investment for establishing e-banking facilities observed as profitless.

6.10. *Financial Risks*

Although online banking has bright prospects, it involves some financial risks as well. The major risk of on line banking includes operational risks (e.g. security risks, system design, implementation and maintenance risks); customer misuse of products and services risks; legal risks (e.g. without proper legal support, money laundering may be influenced); strategic risks; reputation risks (e.g. in case the bank fails to provide secure and trouble free e-banking services, this will cause reputation risk); credit risks; market risks; and liquidity risks. Therefore, identification of relevant risks, and formulation and implementation of proper risk management policies and strategy formulations and implementations were important for the scheduled banks while performing online banking system.

Numerous problems have been identified from the field survey online banking system in Bangladesh. Some of them were in the followings:

- Inefficiency and inadequate knowledge of the bank management about the online banking.
- Lack of proper strategic plan to gain and retain market share of the indigenous banks.
- Lack of international standard communication channel.
- High cost of establishing online banking system.
- Inadequate back and front office management.
- Lack of integrated plan among the banks and the Central Bank authority.
- Inappropriate software and less trust by the Bank authorities on local software.
- Legal barriers and appropriate policy framework

7. **Problems of Dutch-Bangla Bank Limited**

There were some problems of Dutch-Bangla Bank Limited such as:

- Electronic banking takes long time to finalize the transaction process.
- Cash depositing facility were not available through ATM machines.
- Cheque book could not be ordered through electronic banking.
- Above Tk. 50000 could not be withdrawn through ATM machine.
- Though DBBL is trying to give the online service of their customers but there is also some lack of adequate knowledge about the e-banking.
- Sometimes slowness of software or server for reason, people doesn't deposit or withdraw their money their money.
- Sometimes of ATM Booths have no money for proper supply chain management problem and sometimes no electricity in the ATM Booths which customers were fetching acute problem.
- Internet banking does not provide any kind of money transfer from own account to another account, bill payment, e-marketing.
- If we observe the consumer behavior of online banking either Bangladesh perspectives or DBBL perspectives, we observed that female participants were very poor.
- People were not well concerned about internet banking, SMS alert Banking.
- Maximum people hear about e-banking but actually they were not known the system or approach or activities, how it works.
- So the other challenges were:
- Security of Personal information is the biggest challenges for banks.
- Continuity of 24/7 hours services as promised.
- Easy and quick but secure process of servicing.
- Ensure most Handset operability for using online and mobile banking activities.
- Continuous Invention, up gradation & distribution of Banking Application.
- Personalization with Preferred Language, Amount format, Default transactions, Standard Beneficiary list, Alerts is must.

8. **Prospects of E-Banking**

Recently, the government's emphasis on building a digital Bangladesh, setting up ICT park, raising allocation for developing ICT infrastructure, waiving taxes on computer peripherals and other measures including the automation program of banking sector led by the Bangladesh Bank and competition among the scheduled banks in improving customer services have accelerated the prospects of e-banking in Bangladesh.

At present, all foreign banks of our country were using online banking system; they were invested a lot for their automation banking services. They were the pioneer of implementing electronic banking systems in Bangladesh, but now most of the private banks of our country were using electronic banking systems. In our country different banks were offering electronic banking services in different ways,

some were offering ATM services, some were tele-banking and some were electronic fund transfer, debit card, credit card etc. Government thinks it has a great prospect as it is a new technology in digital Bangladesh. But in Bangladesh many people think traditionally, because they cannot think it has any facility to use mobile banking. There were some important prospects of electronic banking such as:

8.1. Time Saving

E-banking is available anytime, anywhere throughout the country. So it can save one's time. But all people not think the same.

8.2. Cost

It is convenient, affordable and it is much more effective in developing savings, it will make access to banking transactions at affordable cost. All people know that its cost is not higher than traditional banking.

8.3. Economic Prospects

E-banking saves money, time, papers, and electricity which is affected our economy. It is make our environment to green life. So it is a great prospects of Bangladesh.

8.4. Trust Worthy

It is much safer and safeguard against fraudulent transactions. One can trust e-banking as traditional banking system. But in Bangladesh traditional branch-based banking remains the most widely adopted method of conducting banking transaction. The poor often have greater familiarity and trust with e-banking than formal banking institutions.

8.5. Make Life Easier

E-banking is real time green banking, available anytime, anywhere throughout the country, it is convenient, affordable and secure, it is much more effective in developing savings habits, it will make access to banking and any transactions at affordable cost, it is much safer, speedy and safeguard against fraudulent transactions. Mobile banking is one kinds of e-banking which also make life easier.

8.6. Security

E-banking a confidential secured and confidential banking than manual banking. Internet Banking, Mobile Banking, ATM card, Credit card, Debit card and POS terminal were all the products of e-banking. All these products have a PIN. This PIN ensures security of money and protects fraudulent transactions. So e-banking is fully secured. It also believed by 46% respondents, but about 29% respondents say it is not secured as they cannot fully trust on online banking than traditional banking system.

8.7. Speedy Process

One benefit of electronic banking is a very speedy process. Transaction can be done anytime anywhere quickly in less time.

8.8. Use

Electronic banking mainly use by young, literate, and business people. Female and old age people were disagree to use e-banking. We observed that 81% people use e-banking and 19% doesn't use. Its using system is also easy. Anyone can use it. 64% people think that it is easy to operate.

9. Conclusion

Most of the literate people want to use modern information technology based banking facilities. They want to compare banking system of Bangladesh with other developed countries. They want to get banking service quickly by not visiting the bank physically which saves their time and cost. That is why the dependencies of people on information technology based banking increasing quickly. We observed that 81% people use e-banking services who were mainly young people and 19% doesn't use these services who mainly near about or above the age of 50 years. Out of 83 male respondents 69 male respondents were using e-banking services and 14 male doesn't uses these services. Out of 17 female respondents 12 female respondents use e-banking but only 5 female respondents doesn't use e-banking. And we also observed that most of the respondents were between 25 to 35 age levels that is 58%, 14% from 35 to 40 years age, 10% from 45 to 50 years age and 9% from 20 to 25 years age. Maximum people were using both ATM and cheque book (almost 35%), only ATM (almost 27%), and all of these three products ATM, Cheque Book and Mobile Banking (almost 19%) services.

Other e-banking services like internet banking, internet payment gateway, and POS terminal were not that much popular. People use e-banking services mainly for time savings (almost 80% people were agreed about just in time service). But people were not satisfied by using e-banking services. From our survey we observed that almost 76% people were not satisfied about infrastructure development of e-banking. And there were lots of challenges of e-banking. The main challenges of e-banking were knowledge barriers (almost 68% people agreed about knowledge is related with e-banking), fraud-forgery (almost 73% were strongly agreed), cost, socio-cultural barriers, legal and security barriers. There were lots of other challenges like financial risk, unsatisfying customer services, economic barriers, obsolesces of technology etc. when we ask people about their opinion to overcome the challenges they have said that, the cost of e-banking services is too high so cost should be minimized. And they think that service should be improved and features of e-banking should be increased. And they want their bank to provide more efficient services. But maximum people agreed that the potentials of e-banking in Bangladesh is high because there were lots of people were waiting for using e-banking services and e-banking service providers can gradually grab these market by giving efficient services to their customers at lowest possible cost. Not only people but also government sector and private sector organizations use information technology based banking facilities for fee collection, recruitment process, disbursing employees' salary, credit facilities through banks etc. So, e-banking stimulates the mainstream economy of Bangladesh.

Recommendations

A well-functioning e-banking network is dependent on availability of a backbone network connecting the whole country. Developing and implementing online banking system in a country like Bangladesh is much challenging. To improve or overcome the problems of e-banking services of DBBL or in the country, there are some recommendations such as:

- E-banking systems should be simple to use, fast and user friendly.
- E-banking services should be standardized so that wherever the solution is used the customer is familiar with the procedure followed. Government should compel the banking sectors to automate their operation and going online by a specific period.
- Provide adequate training and technological support to develop the manpower.
- Proper infrastructure development.
- Appropriate legal framework.
- The whole country should be connected under fiber optic backbone for electronic banking infrastructure as soon as possible.
- Electronic banking sector depends on telecommunication and Internet services. So government should implement the National ICT policy 2002 as quickly as possible.
- Government should implement the cyber laws to ensure proper security about customer's information (i.e. Credit card number).
- Government should establish proper educational institution to create efficient IT professionals to support e-banking in Bangladesh.
- Developing of integrated e-banking software.
- Government, in collaboration with the banks, should educate and inform its citizens and customers on the workability and effectiveness of E-banking. This will increase the confidence level of customers.
- The clearing house operation in Bangladesh should be fully automated system.
- Banks should have adequate research and technological background in this regard.
- Bank can charge normal profit to enlarge the market size on the electronic banking products.
- Political commitment to improve governance and institutional strength is essential for successful application of e-banking.
- As e-bank users mostly use ATMs and POS in most cases, the banks should emphasize on providing uninterrupted service.
- There are some suggestions for DBBL to develop the e-banking services such as:
- DBBL should take short time to finalize the transaction process.
- Cash depositing facility should be available through ATM machines.
- Installment due period should be reminded by SMS.
- Cheque book should be ordered through electronic banking.
- Maximum limit of withdrawal cash amount from ATM

should be increased from Tk. 50,000.00.

- Internet banking should be useful for issuance / stoppage of ATM or Credit Card.
- DBBL should provide adequate training and technological support to develop the manpower or personnel working in the e-banking section.
- DBBL should have a strong strategic plan for automated market development
- A specialized, self-owned organization can be established by the bank so that they can develop the infrastructure of e-banking in Bangladesh that will also be the social responsibility for them.
- A standard carrier design needs to be formed for the computer experts within the bank so that they do not feel interest to go abroad for lucrative financial offer.
- The bank requires systemic and planned budget for expanding e-banking.
- To provide the nationwide & countrywide services, the bank should expand the number of branches, and ATM booths at rural level so that the most of the people of the country can get the benefit, which live in rural level.
- To take initiative for implementing automated financial sector by coordinate effort of the central bank along with the commercial bank.

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