

The Impact of Electronic Banking on Financial Performance of Commercial Banks in Bangladesh: A Descriptive Analysis

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Abstract

E-banking has become one of the most popular methods of banking that has experienced a considerable expansion during the last few years. Information technology (IT) has become the heart of the banking sector, while the banking industry is the heart of every robust economy. If it collapses so will the economy. Through reducing banking costs, electronic banking can increase bank incomes. However, there is a relative dearth of empirical studies examining the impact of e-banking on performance of banks. Though e-banking is gaining acceptance in Bangladesh, the impact of e-banking on bank's performance is yet to be established. This paper fills this gap. Using panel data of commercial banks, this study empirically investigated the impact of e-banking on the performance of Bangladeshi banks measured in terms of Net Profit and factors representing electronic Banking. Empirical findings of this study are of greater significance for the developing countries like Bangladesh because it will invoke the attention of the bank management and policy makers to pursue such policies to expand e-banking. This study also contributes to empirical literature by reconfirming (or otherwise) findings of previous studies.

Keywords: E-Banking, Financial Performance, Commercial Banks

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INTRODUCTION

The new era of modern banking has been introduced by the implementation and practice of e-banking. This modern banking trend is increasing rapidly in Bangladesh. Even if you look twenty years back in the banking sector, Services offered by banks were fully analogous. Handwritten forms were used back then. By introducing technological advancement banks have developed a lot. Contingent upon the conveyance stations, e-banking can be arranged in various gatherings for example, web banking, phone banking, cell phone or short message administration (SMS) banking, Automated teller Machine (ATM) banking, and on the quick development of the use of the web and the declining cost of Web transfer speed have arisen the web banking the most mainstream and promising method of e-banking. These information technologies have made the e-commerce, e-business, and financial services sector more and more important components of competitive corporate strategy and a powerful engine for global economic growth. Among other mechanisms, e-banking is the most prominent and popular one (Salehi, Alipour 2014).

Electronic banking ensures the electro technological use to add value in delivering banking services. Internet technology embraces the latent to fundamental modification in the banking industry. Electronic banking delivers alternatives for quicker delivery of banking facilities to a huge range of customers. Electronic banking delivers services remotely. Any individual can perform his personal banking activities remotely by getting access to bank websites through the internet. Internet banking is an effective tool for business development around the world, along with this work as a smart way of delivering functional services of banks. Bangladeshi banks have also taken electronic banking extremely for the betterment of user experience and banks own development.

The increasing capacity of banking systems, business capacities, client administrations and other substitute exercises (Siaw and Yu, 2004). Truth be told, innovative upset and ICT have wide and sweeping impact on the economy on the loose. In understanding Howcroft and Durkin (2003), perhaps the most basic execution of mechanical advancement in the financial area is to make far off clients come nearer and simplicity of Administration. Rihan (2002) defined that, Mechanical advancement plays a crucial role in achieving competence and enhancing client assistance in the banking sector. In Bangladesh, innovation driven banking has begun another time for the banking and monetary assistance area. Driving modern social orders perceive the significance of data as critical to their financial wellbeing and to worldwide rivalry (Hanna, Nagy K, 1991).

Banking Sector in Bangladesh

Currently, banking has been so crucial to our society. The nation is currently a progressive one. Banking service plays a vital role in the economic growth of Bangladesh. Banking sector is considered as a barometer of its economic status. The banking sector thinks that by implementing new technologies, banks would be able to

enhance customer service and forge stronger bonds with their clients. In Bangladesh, Nationalized Commercial Banks (NCBs) were established in 1972. Six nationalized commercial banks (NCBs) dominated the financial sector in the early years after independence. The banking system's organizational structure has undergone major alteration since the post-reform era. Ali (2003) described that nowadays, the traditional banking business system of the country through depositing and advancing of money has almost ended. The banking system must be segmented in order for banks to offer a wide range of financial services. Data innovation assumes an empowering part in creating and appropriating valuable data. In spite of the fact that bearing and keeping up data innovation assets and framework for the creating economies are not as simple as the created economies but rather the non-industrial country needs to acknowledge it and oblige it as the entire world is slowly changing into a solitary commercial center. So to stay in the market ventures need to pick up upper hands paying little mind to the monetary status of the country. Meanwhile, the banking industry has been also looking for new methods to expand its customer base and to counteract the aggressive marketing effort of those non-traditional banking entities (Graven, 2000). Revolution in information and technological innovations and its use in banking activities have led credence to transformation of manual system banking operations to technology based banking all over the world and in recent years information and communication technology (ICT) have been recognized as the heart of banking sector while for a robust economy banking sector is playing a significant role (Abubakar, Tasmin 2012). Finally, the banking sector as well as the ebanking sector plays a crucial role for economic growth of the country and contributes to customer satisfaction by providing smooth and convenient banking service.

Adaptation of Electronic Banking Services

Al-Amin and Rahman (2010) defined that through the use of a personal computer or other intelligent devices, clients can access their accounts and obtain information about new products and services offered by banks using a process known as "e-banking." They also mentioned that although there are some electronic products and services being offered by the banks, true e-banking system is yet to be developed. Existing form of e-banking in Bangladesh takes mainly internet banking, online banking and mobile banking. The banking sector thinks that by implementing new technologies, banks would be able to enhance customer service and forge stronger bonds with their clients. (Hasan, Baten, Kamil & Parveen, 2010). Bangladesh is transitioning from traditional banking systems to electronic banking systems in order to improve banking performance and to attract more customers. It is believed that e-banking will help banks to cut costs, increase revenue, and become more convenient for customers (Halperin 2001). A more efficient information collecting and administration process is a significant advantage of electronic banking. In the last few years a number of private and public sector banks are adopting a high level of technology and electronic banking system (Hasan *et al.* 2010). Kondabagil (2007) opined that the decision to implement e-banking is influenced by a variety of factors, including competitive costs, customer retention, and enhanced overall performance of the banks.

Approachability: The articulation "receptiveness" in electronic banking elucidates the limit of customers to get to evidence and organizations. All are truly joined together; hardware, programming and settings; web affiliations; similarly as the limits and failures of customers (Hackett and Parmanto, 2009). Approachability toward the monetary assistance, ATMs, point of sale, mobile, and the web banking organization assure better benefit of the clients.

Solace: Electronic banking proposes a more huge degree of reasonableness to make the customers use web banking wherever at whatever point (Gerrard and Cunningham, 2003).

Security: Clients want to secure their money related and singular data, this issue is measured as conceivably the basic part for online banking (Kimery and McCord, 2002).

Electronic Banking and Banks Financial Performance

Yousafzai, S.Y., Pallister, J.G. and Foxall, G.R., 2005, accessibility is defined as the ease with which individuals can locate specific computer systems (such as Online Banking services). User perceptions of accessibility have been found to be related to technology and information use in both organizational communications and information systems research (Chandio, 2011). Accessibility has a number of dimensions such as the access to and interface with the source, and the capability of physically retrieving important information.

Examining the relationship between innovative technology usage and bank profitability from Bangladesh's perspective and concluded with positive remarks on the relationship (Rahman, 2007). It means that the positive impact of electronic banking on banks' performance. A significant positive relationship between e-banking adoption-utilization and bank profitability was also found in the study of Karimzadeh *et al.* (2014). Using technology in various organizational contexts, the banking sector also adapted and utilized electronic tools to conduct banking operations. The increasing technology usage trend in the banking sector and the effects of e-banking on banks' financial performance has widely been examined (Siddik *et al.*, 2016; Akhisar *et al.*, 2015). Aduda and Kingoo (2012) added credibility to the findings of DeYoung *et al.* (2007) by establishing a positive

association between electronic banking operations and banks' financial performance. According to actual data, many outcomes can be derived from various viewpoints and national contexts. Researchers from different nations have compiled a variety of effects, such as the positive, negative, and mixed effects of e-banking on a bank's financial performance.

Research Objective

There is a noteworthy gap in literature on adoption of E banking services and its influence on financial performance of scheduled banks in Bangladesh. Therefore, following are the objectives of the research: -

1. To know the current scenario of electronic banking in banking industry
2. To what level people of Bangladesh use electronic banking modes.
3. To what level commercial banks' financial performance affected by electronic banking in Bangladesh?

RESEARCH METHODOLOGY

Research Approach

The report is mainly based on quantitative research techniques where statistical techniques have been used for conducting this study. Questionnaire has also been used for conducting a survey to identify the current scenario of electronic banking and users of it. Outcome analysis from the survey report has been described in the report. The regression analysis Regression analysis has been performed to examine the model and to determine if there is any significant impact of banking on financial performance of banks.

Sample selection

For statistical analysis, the population of this study is the private commercial banks that use electronic banking modes. Data has been fetched through: Website of Bangladesh Bank, For Survey. Here our target population is the clients of e-banking. As our study is based on e-banking, for our expediency, we have randomly chosen the individuals who use e-banking as our target population. Here, by consumers of e-banking we mean individuals who use any of the e-banking services, that is, ATM card, Debit card, Credit card, Online banking, Phone banking, SMS banking and Mobile banking. Each individual consuming the e-banking service is considered as a unit of analysis to identify user of e-banking.

Data Analysis Model:

The regression model that was evaluated was represented as follows:

$$Y_i = \alpha_0 + \beta_1 \text{ATM}_i + \beta_2 \text{POS}_i + \beta_3 \text{MFS}_i + \beta_4 \text{EMT}_i + \epsilon_t$$

Here,

Y_i = Financial performance represented by profitability (net profit)

ATMS = the number of ATMS Transactions by the commercial banks

POS = the number of point of sale Transaction

MFS = the number of Transaction through Mobile Financial Services

EMT = E-money Transfer

α_0 = Estimated value of Y when all the other variables are zero

β = Correlated volatility of estimated value of Y

ϵ_t = Error term

DATA ANALYSIS AND INTERPRETATION

Identifying people of Bangladesh use electronic banking modes

Table 01: Age category of the respondents

Age Category(in year)	Frequency	Percent	Valid Percent	Cumulative Percent
18 to 25	34	20.8	20.8	20.8
25 to 30	92	35.1	35.1	56.0
30 to 40	80	34.1	34.1	90.3
40 to 50	20	6.6	6.6	96.9
Above 50	6	3.1	3.1	100
Total	200	100	100	

From the above table we can achieve that 35% of our respondents are aged between 23 to 30 years, 34% of them are aged between 30 to 40 years, 21% of them are aged between 18 to 23 years, and 7% of them are aged between 40 to 50 years and remaining of them are aged above 50. So, our maximum respondents lie within 23 to 40 years.

Table 02: Gender of the respondent

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	129	64.9	64.9	64.9
Female	71	35.1	35.1	100
Total	200	100	100	

From the above table we can accomplish that 65% of the total respondents are male and the remaining is female which implies that males are more involved in-banking than females.

Table 03: Occupation of the respondents

Occupation	Frequency	Percent	Valid Percent	Cumulative Percent
Government Service	20	9.3	9.3	9.3
Private Service	92	39	39	48.3
Business	14	9.3	9.3	57.5
Student	66	29.3	29.3	86.9
Housewife	4	1.5	1.5	88.4
Others	20	11.6	11.6	100
Total	200	100	100	

Here in this table, we can interpret the occupation of our respondents of which 39% are served in the Private sector, 29% are students, 9% served in the government sector, 9% of them are in business, 2% are housewives and the remaining of them are included in other occupations. So, it is apparent that most of our respondents are in the private sector.

Table 04: Respondent's income level

Income Level	Frequency	Percent	Valid Percent	Cumulative Percent
No Income	37	18.1	18.1	18.1
Less than 15000	29	14.7	14.7	32.8
15000-30000	56	25.5	25.5	58.3
30001-45000	38	18.5	18.5	76.8
45001-60000	14	9.3	9.3	86.1
Above 60000	26	13.9	13.9	100
Total	200	100	100	

From the above figure we see that people of all income levels use e-banking with a reasonable percentage. The people with income level 15000-30000 tk use e-banking more (25%) than others. It is obvious that a good percentage (18%) of people with no income are also using e-banking. This is because students staying away from home with no income are using e-banking as an intermediary of money transactions from their home.

Table 05: Bank Accounts in Different Banks

Bank Name	Frequency	Percentage
DBBL	142	31.9
SCB	46	10.3
HSBC	45	10.1
BRAC BANK	42	9.4
EBL	22	4.9
GOVT. BANK	40	9
OTHER BANK	108	24.3
TOTAL	445	100

From the above table and chart we see that 32% accounts of our respondents are in Dutch Bangla Bank Limited (DBBL), 10% in Standard Chartered, 10% in HSBC, 10% in BRAC Bank and 5% in Eastern Bank. Government bank accounts are 9%. Other bank accounts are in Prime bank, City Bank, Islami Bank, Mutual Trust Bank etc which are 24% of the total accounts. So it is clear that respondents are using DBBL accounts more for E-banking than any other bank accounts. This may happen because of the availability and reasonability of DBBL.

Table 06: Debit Card Users

Use of Debit Card	Frequency	Percent	Valid Percent	Cumulative Percent
No	23	16.6	16.6	16.6
Yes	177	83.4	83.4	100
Total	200	100	100	

A huge percentage (83%) of the total e-banking users use Debit cards. It seems that most e-banking users are hugely dependent on the Debit card for their financial transactions or banking. It is possible for the users

because Debit cards facility meet all the needs of the consumers.

Table 07: Debit Card Users

Usage Frequency	Frequency	Percentage	Valid Percentage	Cumulative Percent
Daily	20	9.7	9.7	9.7
Once a Week	54	25.5	25.5	35.2
Twice or more in a week	68	31.9	31.9	67.1
Once a month	31	13.9	13.9	81.0
Twice or more in a month	39	17.1	17.1	98.1
Once in 6 months	2	1.4	1.4	99.5
Once a year	1	.5	.5	100
Total	217	100	100	

Most of the respondents (32%) use Debit cards more than once in a week. The second highest percentage (25%) belongs to those respondents who use a Debit card once in a week. This proves consumers use Debit cards on a regular basis. They use Debit cards for doing most of their banking transactions in their day to day life.

Table 08: Debit Card Transactions

Transactions	Withdrawal		Balance Inquiries		Make payment		Transferring Fund		Deposit	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Never	13	8.3	11	5.6	36	15.7	112	8.3	98	46.3
Rarely	26	9.3	33	14.8	46	16.2	31	9.3	44	20.4
Sometimes	53	25.0	96	44.0	49	23.1	54	26.0	58	25.4
Frequently	125	57.4	76	35.6	96	44.6	125	56.4	17	7.9
Total	217	100	216	100	217	100	216	100	217	100

Most frequently done transaction is the withdrawal of cash through an ATM card. A big proportion of ATM users (leaving some people as exceptions) either frequently (124) or sometimes (58) withdraw cash. Only 18 respondents out of all Debit card users have never withdrawn cash. The transaction that most of the respondents sometimes do is payment and balance inquiries. Another big proportion says they also do it frequently. But the transactions that people usually never do are making transferring funds and making deposits.

Table 09: Users of Internet Banking Apps

Use Internet Banking App	Frequency	Percent	Valid Percent	Cumulative Percent
NO	54	18.6	18.6	18.6
Yes	146	81.4	81.4	100
Total	200	100	100	

Nowadays, internet banking apps are popular and easy to use. People use those apps mostly for making payment and day to day transactions. Almost more than 80% of people use internet banking apps.

Table 10: ATM Booths and Internet Banking Apps Users

Opinion	Frequency	Percent	Valid Percent	Cumulative Percent
Never	26	12.5	12.5	12.5
Rarely	45	29.2	29.2	41.7
Sometimes	108	44.0	44.0	85.6
Frequently	38	14.4	14.4	100
Total	217	100	100	

Most of the respondents are responding, they sometimes face problems while using ATM booths and internet banking apps. Few responded they didn't face any problem while using e-banking modes.

Table 11: Forgetting Secret Code (password)

Opinion	Frequency	Percent	Valid Percent	Cumulative Percent
Never	136	63.4	63.4	63.4
Rarely	54	24.5	24.5	88.0
Sometimes	22	9.8	9.8	97.7
Frequently	6	2.2	2.2	100
Total	217	100	100	

People seem to be very cautious about remembering their respective secret code. We can conclude this, since a huge percentage (63.4%) of the respondents has never forgotten the secret code. Although some people (9.7%) have admitted that they forget the code sometimes but frequently forgetting the code (2.3%) is not a usual thing to happen.

Table 12: E-banking Users' Satisfaction Level

Satisfaction level	Frequency	Percent	Valid Percent	Cumulative Percent
Low	25	11.1	11.1	11.1
Medium	140	64.5	64.5	75.5
High	51	24.4	24.4	100
Total	217	100	100	

From the above table it is seen that 64.5% respondents are in medium satisfaction level, 24% are in high satisfaction level & 11.1% are in low satisfaction level. So, it is evident that the maximum respondent's satisfaction levels for e-banking users from different mediums.

Identifying to what extend commercial banks financial performance affected by electronic banking in Bangladesh

The data analysis and research findings on the effect of electronic banking on the financial performance of commercial banks in Bangladesh and includes research variables, descriptive statistics and regression analysis. The data was collected from secondary sources which were the financial statements and Central Bank of Bangladesh annual reports for the years 2015 to 2019, monthly data has been used. The data was analyzed using Microsoft Excel.

Analysis for the Factors Affecting Profitability by Electronic Banking

Regression method helped to estimate the unknown dependent variable with the help of several known independent variables. Here I choose Net profit as a dependent variable on 4 independent variables related to the electronic banking system.

Table 13: Descriptive Statistics

Name	ATM	POS	MFS	E-Money Transfer
Mean	4.435	0.833	450.33	513.15
Standard Error	0.2391	0.0703	18.075	20.525
Max. Value	7.290	1.650	652.354	652.354
Min. Value	0.321	0.012	151.034	251.524
Observation	60	60	60	60

The above table shows the mean, Standard Error, Max. Value, Min. Value of 4 independent variables. The highest mean and standard error is for transactions through E-Money transfer, lowest one is from POS. The total number of observations is 60.

Table 14: Multicollinearity

Particulars	ATM	POS	MFS	E-Money Transfer
ATM	1			
POS	0.8984	1		
MFS	0.9550	0.9203	1	
E-Money Transfer	0.9732	0.9282	0.99025	1

The above table shows the correlation among 4 independent variables. Correlations among the variables are very high above 85%. The highest correlation is between MFS and E-Money Transfer. The correlation between ATM and E-money transfer is also high.

RECOMMENDATIONS AND CONCLUSION

The study mentions the administration of banks which are slow in modernization adoption, to transfer in and accept various innovations in their processes in order to coast up their profitability. This reference is well supported by the fact that in Bangladesh, the foremost banks in terms of profitability are mostly the fast movers in adoption of new technologies.

Profitability is also vital to shareholders and the market is also intense on the profitability of organizations. Any moral and responsible attempt to improve profitability of a company will be appreciated by the shareholders. Commercial banks should therefore continue to adopt new technologies which will improve their limits and hence their profitability in order to attract more investors. Adaptation of more ATM banking activities can enhance financial performance of banks. Government policy makers should also appraise policies related to promotion of innovation adoption and transfer of technology. Government should inspire adoption of innovations that will improve profitability of organizations because it will convert to better tax revenues for the government.

The study results show that electronic banking has a moderate influence on profitability of commercial banks in Bangladesh. The significant test showed that the influence of electronic banking on bank profitability was statistically significant. This means that the combined effect of the electronic banking in this research is

statistically significant in explaining the profits of commercial banks. However the statistical significance is different for each electronic banking component tested and therefore if banks are to have a meaningful contribution to profits, they should adopt complex forms of electronic banking. The results also indicate that E-banking has strong and significant marginal effects on profitability of commercial banks in Bangladesh. Thus, there exists a positive relationship between e-banking and bank performance.

References

- Abubakar, A. A.; Tasmin, R. B. H. (2012). The impact of information and communication technology on banks' performance and customer service delivery in the banking industry, *International Journal of Latest Trends in Finance and Economic Sciences* 2(1): 80–90.
- Aduda, J., & Kingoo, N. (2012). The relationship between electronic banking and financial performance among commercial banks in Kenya. *Journal of Finance and Investment Analysis*, 1(3), 99-118.
- Akhisar, İ., Tunay, K. B., & Tunay, N. (2015). The effects of innovations on bank performance: The case of electronic banking services. *Procedia: Social and Behavioral Sciences*, 195, 369–375. doi:10.1016/j.sbspro.2015.06.336
- Ali, Muhammad Mahboob (2003).Impact of Globalization Process on Corporate Planning of Commercial banks in Bangladesh: A survey of Banker's Opinion. *Journal of Economic Cooperation Among Islamic Countries, Sestrcic, Ankara Center*, Vol.24, No.3, July, 2003, pp.87-114.
- Chandio, F.H. (2011). Studying Acceptance of Online Banking Information System: A Structural Equation Model. Ph.D. Thesis-Brunel Business School, Brunel University London, (June).
- DeYoung, R., Lang, W. W., & Nolle, D. L. (2007). How the Internet affects output and performance at community banks. *Journal of Banking & Finance*, 31(4), 1033-1060. doi: jbankfin.2006.10.00310.1016/j
- Durkin, M.G. and Howcroft, B. (2003). Relationship marketing in the banking sector: the impact of new technologies. *Marketing Intelligence & Planning*.
- Gerrard, P. and Barton Cunningham, J. (2003). The diffusion of Internet banking among Singapore consumers. *International Journal of Bank Marketing*, Vol. 21 No. 1, pp. 16-28. <https://doi.org/10.1108/02652320310457776>
- Graven, M. P. (2000). Electronic Money, PC Magazine. August.
- Hackett, S. & Parmanto, B. (2009). Homepage not enough when evaluating web site accessibility, *Internet Research*, Vol. 19 No. 1, pp. 78- 87. <https://doi.org/10.1108/10662240910927830>
- Halperin, K. (2001). Balancing Act., Company Business and Marketing. February.
- Hanna, N.K. (2011). E-transformation as an integrating strategy. In *Seeking Transformation Through Information Technology* (pp. 1-19). Springer, New York, NY.
- Hasan, A. S.; Baten, M. A.; Kamil, A. A; Parveen, S. (2010). Adoption of e-banking in Bangladesh: an exploratory study, *African Journal of Business Management* 4(13): 2718–2727.
- Karimzadeh, D., Emadzadeh, D., & Shateri, J. (2014). The effects of electronic banking expansion on profitability of a commercial bank (Sepah bank of Iran). *Indian Journal of Scientific Research*, 4(6), 305–312.
- Kimery, Kathryn M. and McCord, Mary (2002). Third Party Assurances: Mapping the Road to Trust in eRetailing. *Journal of Information Technology Theory and Application (JITTA)*: Vol. 4 : Iss. 2 , Article 7. Available at: <https://aisel.aisnet.org/jitta/vol4/iss2/7>
- Kondabagil, J. (2007). *Risk management in electronic banking: concepts and best practices*, Vol. 454. Singapore: John Wiley & Sons, 75–90. <http://dx.doi.org/10.1002/9781118390436>
- Rahman, M. M. (2007). Innovative technology and bank profitability: The Bangladesh experience. *Policy Analysis Unit (PAU). Bangladesh Bank WP*, 803, 1–42.
- Salehi, M.; Alipour, M. 2014. E-banking in emerging economy: empirical evidence of Iran, *International Journal of Economics and Finance* 2(1):201–209.
- Siaw, I. and Yu, A. (2004). An analysis of the impact of the internet on competition in the banking industry, using Porter's five forces model. *International Journal of Management*, 21(4), p.514.
- Siddik, M. N. A., Sun, G., Kabiraj, S., Shanmugan, J., & Yanjuan, C. (2016). Impacts of e- banking on performance of banks in a developing economy: Empirical evidence from Bangladesh. *Journal of Business Economics and Management*, 17(6), 1066–1080. doi:10.3846/16111699.2015.1068219
- Yousafzai, S.Y., Pallister, J.G. and Foxall, G.R. (2005). Strategies for building and communicating trust in electronic banking: A field experiment. *Psychology & Marketing*, 22(2), pp.181-201.