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Adoption of Real Time Gross Settlement in Bangladesh: A study on some selected banks

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Abstract

Economic growth of a country is fostered by the development of financial services. Electronic financial services play an important role in upgradation of payment systems. In recent years, payment system in Bangladesh has undergone a few dramatic changes. In the changes Real Time Gross Settlement(RTGS) is an important element which can be a strong catalyst for development of payment systems in the electronic banking and financial services. Though Bangladesh has adopted some electronic financial services like ATM, Internet Banking, BEFTN, RTGS etc. the rate of embracing these services are still low. Financial services of the country is yet to reach the global banking standard and upgradation is needed in some areas. This study has been done with both primary and secondary sources of data, which included different research articles and newspapers. The purpose of the study is to depict the present scenario of RTGS in the banking system of Bangladesh. This paper has demonstrated the scope and advantages of RTGS as compared to other electronic banking services prevailing in the country. The study has talked about the knowledge differences among the users of payment systems and providers of payment services. This paper seeks to identify the awareness of end-user financial services. The discussion has some limitations and the implication of these have been described.

Keywords: Banking, Payment Systems, Electronic Payment, RTGS, Bangladesh.

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INTRODUCTION

Being one of the major components of modern financial services, RTGS has been introduced to transfer larger amount of fund from one bank to another bank. The study is conducted to get the concept of RTGS as an electronic service providing tool. As a new service of bank, people are not well acquainted with RTGS. Hence the study will continue to identify the present status of its awareness among the users. A good payment system must reduce the transaction cost and liquidity must be improved(Manalac et al., 2002). The transaction fee for RTGS is as low as BDT 100 and it can be used in any working day. Please note that BDT 100 is maximum amount that can be charged and some banks in Bangladesh are providing the service for free of cost. The study is performed to determine the adoption of RTGS in Bangladesh as a payment processing tool. RTGS is considered to be final settlement which takes immediate effect. The standard time to complete an RTGS transaction is 20 minutes and maximum time allowed is 30 minutes. Among other benefits of RTGS it is found most beneficial that it reduces the risk of fraud payment in the banking industry. Thus it also reduces the cost of carrying cash. One of the attractiveness of all electronic payment system is that it will save time energy and money. The study showed that RTGS is not an exception to that. The popularity of various types of electronic payment system is being researched for a long time. Among other options of electronic banking cash withdrawal, cash deposit, fund transfer and balance query are the most popular(Shamsuddoha et al., 2008). The study will also depict any problems and irregularities in the early adoption of RTGS in Bangladesh. The researcher identified the objectives of the study to be as to elucidate the concept of Real Time Gross Settlement(RTGS). The study will help the readers to clarify the meaning of RTGS. The study will be conducted in Bangladesh with a view to identify the present condition of RTGS in the country. After completion of the study it is expected that it will help to determine the adoption of RTGS in the context of Bangladesh.

LITERATURE REVIEW

RTGS is an interbank large value fund transfer mechanism both in foreign and local currency. It is one of the major components of payment system. Wilhelmina C. Manalac has introduced some features of good payment system. The popularity of various features of electronic banking has been a study topic for researchers. Among the options of electronic banking cash withdrawal, cash deposit, fund transfer and balance query are the most popular. A payment system is called to be effectively functional if it is able to improve the stability of the financial system. Reduction of transaction cost and improvement of financial liquidity are expected from a good payment system(Manalac et al., 2002). Not only that RTGS has been treated as a mode of going green as the customers seek for it. In order to strengthen the financial position, the Indian banks have adopted several electronic banking techniques in the form of economic reform and financial liberalization. Electronic financial payment is in its own way of wonderful growth, but the usage needs to be increased at an advanced stage. Still 90% of the financial transactions are cash depended in India. So, there is a scope to extend the electronic payment system and its usage (Sinha et al., 2014).

Electronic business and financial services are getting importance day by day. The economic development comprises of effective improvements in e-commerce, e-business and financial services(Hasan et al., 2010). RTGS settles money and securities by handling and it is the final settlement of funds where transfer can take place with immediate effect. It is a central processing and settlement facility system which was launched on 29th October 2015 in Bangladesh(Alam, 2017). The demand for electronic banking (e-banking) in Bangladesh to

both business community and retail customers are enormous. Unavailability of a network backbone and inadequacy of reliable and secure information infrastructure are the main constraints that cause sluggish electronic financial services in the country (Rahman et al., 2010). Alternative delivery channel plays a very important role in providing banking services to the larger community. Electronic banking provides services in a quicker and cheaper manner(Alam, 2017). In Bangladesh, financial services have extensively reached to the root level. So cost-effective and hassle-free wireless connectivity should be prioritized to increase the users of Internet Banking (Khanam et al., 2018). RTGS settled approximately 8,820 transactions amounting Tk. 1,387.8 billion from 29 October 2015 to 31 December 2015(Alam, 2017).The central bank of Bangladesh is reforming the payment system of the country to build 'Digital Bangladesh' though there are limitations. Some of the scheduled banks are improving banking services and swiftly embracing e-banking on a broader scale (Rahman et al., 2010). Green initiative movement is being popular in various industries and financial services industry is not an exception to that. There may be a lot of reasons to select one financial institution over another and green banking is one of them. Financial institutions are going green due to a number of reasons among which customer demand is important. Customers may have choice to select a green bank for its service(Biswas, 2011). Bangladesh is making progress in digitalization and mobile banking has emerged as a new phenomenon. The modernization process in the financial industry has been flourishing in e-business, e-commerce, e-government, m-banking or mobile banking etc. However, e-commerce is making much more progress than mobile banking in Bangladesh. The inconsistency has been studied to explore the causes of less popularity in mobile banking. Researchers tried to identify possible factors that may be responsible for apparent inconsistency. There is a huge potentiality of mobile banking in the country(Islam et al., 2017). Financial risk is involved in some e-banking services. Security risks, system design, implementation and maintenance risks are common risk involved in e-baking activities. The general name of these risk is operational risk. Other risks such as products and services risks and legal risk are also assumed in the banking industry. Legal risk arises when banking is done without proper legal support. Money laundering may be influenced by some operational risk. Strategic risks and reputation risks arises when the bank fails to provide secure and trouble free e-banking services, thus instigates reputation risk. Credit risks, market risks and liquidity risks are unavoidable risk involved in banking services. Identification of relevant risks, and formulation and implementation of proper risk mitigation policies and strategies are important for the scheduled banks while performing e-banking and joint efforts are needed to overcome the limitations in supporting e-banking in the country (Rahman et al., 2010). Financial exclusion is still a key challenge for India. Nearly, 40 percent of the inhabitants of India is facing challenge of getting touch in formal banking. Bank is dominating the formal financial system in many countries including India. The use of POS machines and ATM cards in shopping and other retailers is increasing as a result of technological innovations. (Boro, 2015). The use of internet and mobile banking has some security implications like phishing, frauds etc. Banks are issuing One Time Password (OTP) for users to mitigate the fraud risk. Technological innovations in payment systems are not well-known in the North East India. E-banking has not been popular due to lack of awareness(Boro, 2015). In relation to provide modern banking facilities, banks have to provide services like electronic banking, mobile banking, online documentation etc. Indian banks are adopting international activities that will enable them to maintain sustainable environment. Business model of banks needs to be changed to reduce carbon emission and thereby comply sustainability. The bank needs to give loan in lower carbon producing business and should develop new sustainable development

programs to reduce the carbon generation to the environment (Singhal et al., 2017). Multinational banks have already started to introduce marketing activities related to specialized products like electronic products. They are effectively reaching their target customer with product marketing. Multinational banks are focusing on solving people's problem and modernizing their lifestyle through highly technical products. The progress of electronic banking users increasing is at a great pace (Shamsuddoha et al., 2008).

METHODOLOGY

The research is quantitative in nature. The study has been conducted based on both primary and secondary data. I designed survey questionnaire to collect primary data from different bank customers. Primary data were collected from discussion with Treasury Division of Uttara Bank Limited and Janata Bank Limited, National Bank Limited and NRB Commercial Bank Limited. It was used to assess the level of adoption of RTGS among bank customers. The sources of secondary data were journals of banking, newspaper, Bangladesh Bank publications, Internet, Magazines and Books in Bangladesh Institution of Bank Management Library. The study is both exploratory and descriptive in nature. Sample size determination is a very important issue in surveying bank customers, because a too large sample size wastes time and money, on one hand and a too small sample size leads to inaccurate result on the other. The sample size is determined with an estimated 90% confidence level using the following formula: $n_r = \frac{4pq}{d^2}$ Where n_r = expected sample size, p = fraction of the population having the desired characteristics, q = 1-p and d = the degree of precision. As the proportion of the population (p) is unknown, I assumed p = 0.5. The degree of precision (d) is the probable error percentage that is acceptable. Using the formula minimum sample size is determined to be 100. The study was conducted through a well-designed questionnaire. The respondents were from customers within 3 commercial banks of Bangladesh. However, bank officials from those banks were also interviewed. The survey comprised of questionings on some commonly used questions like age group, gender and profession. The average monthly amount of transaction in RTGS was asked to the respondents. Some specific questions on RTGS like fees, usefulness and availability were told to be answered. Some contradictory questions such as riskiness and easiness of RTGS transactions were also asked. The questionnaire ended with the open ended question on other features need to be included in RTGS. I used Microsoft Excel 2016 for making graphs and charts. Statistical Package for Social Sciences (SPSS) version 23 was used for statistical analysis in the form of descriptive statistics. The data were presented in the tabular form and graphs were used where required.
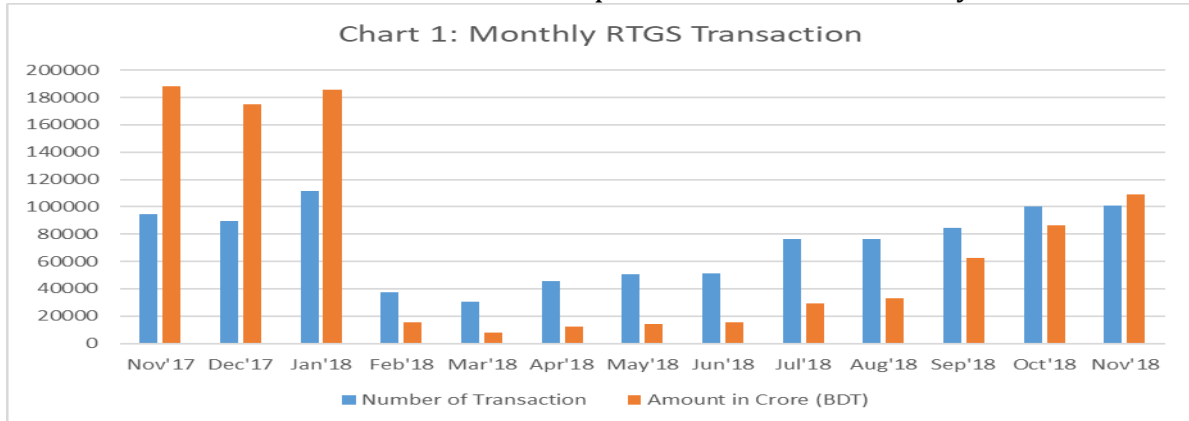
RESULT AND DISCUSSION

Discussions with Bank Officials

The study was conducted to understand the effectiveness of RTGS system in Bangladesh. Discussion and collected data illustrate that in 2018 both the number and amount of RTGS transaction declined. The respondents from bank officials stated that was due to disruption of the RTGS operation in the year 2018. Some discussant told that the system was not properly tested and user acceptance was not confirmed before inauguration of RTGS in Bangladesh. The problem arose due to overloading of data in the system. As a result, Sonali Bank Limited, the largest commercial bank in Bangladesh has discouraged and in some cases stopped the use of RTGS in the bank, though the fee was as low as Tk 100 whereas, Shahjalal Islami Bank Limited and NRB Commercial Bank Limited don't take RTGS fees. Among others there are some limitations of using the system. Wrong entry could have been corrected but it

would create a hazard for the banks. Banks inability to reconcile is also another demerit of the system. Often return of RTGS mismatches with the entry. The respondents told the system is not real as it is named. The system takes up to 30 minutes and manual entry needs to be performed.
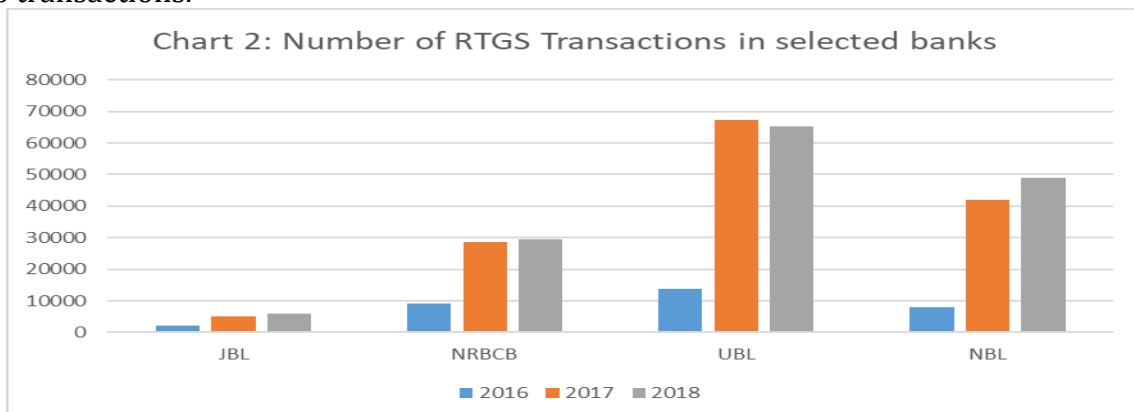
Total Monthly RTGS Transactions

The bar chart below illustrates the number of RTGS transactions occurred in between 2017 and 2018 along with the amount of transactions at monthly intervals. It can be seen that both the number and amount of transactions fell a lot after January 2018 and then maintained an increasing trend from February 2018 to November 2018. The number of transactions in RTGS raised steadily in the year 2018 and this led to an increase in the amount involved in the RTGS transactions. Overall we can see an upward trend in the monthly RTGS transactions.

Source: Bangladesh Bank Website

Number of RTGS Transactions in selected banks

The bar chart below shows the number of RTGS transactions in some the banks. The number is in increasing trend in all four selected banks. In Janata Bank Limited the number of transactions increased 143% in 2017. Uttara Bank Limited has also experinaced an uplift in the number of transactions in 2017 but in 2018 it slightly declined. From the data of NRB Commercial Bank Limited and National Bank Limited it can be assumed that RTGS transactions increased steadily from the year 2016 to 2018. Overall, the number of transactions grew slightly and if this trend continues we can assume a massive increase in the RTGS transactions.

Source: Primary

Amount of RTGS fund in selected banks

The bar chart below represents the amount of RTGS transactions in the year 2016 to 2018 in selected four banks. In all of the banks the amount of transaction is in an increasing trend. In 2017 the number of RTGS transacted amount in Janata Bank Limited increased more than 100% from 2016. All other banks under the study are also in an increasing trend for RTGS transaction. Except 2018, the amount decreased in most of the cases.
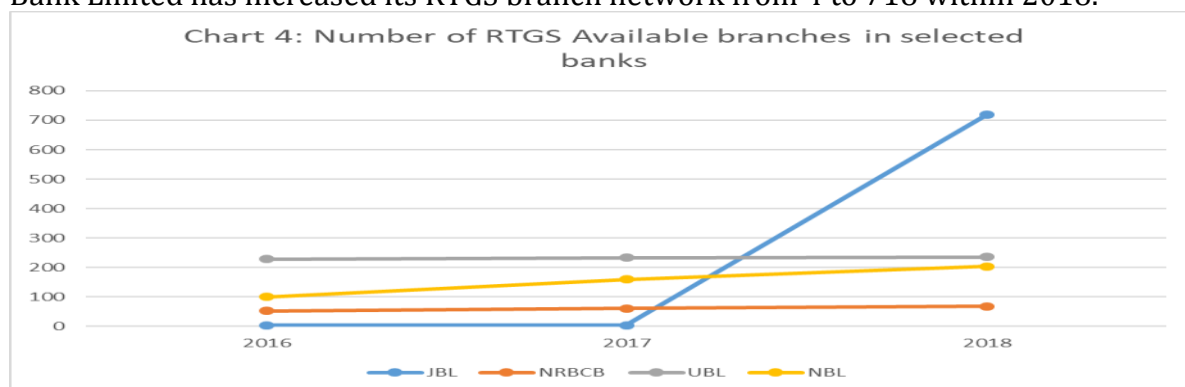
Table 1: Amount of RTGS transaction in selected banks

amount in crore Tk

	2016	2017	2018
JBL	168198	349200	154439
NRBCB	709	2459	2613
UBL	124984	123338	44670
NBL	67700	135500	69508

Source: Primary

Number of RTGS Available branches in selected banks

RTGS technology is being adopted in most of the banks operating in Bangladesh. Almost all of the branches of the selected banks are under RTGS facility. The below chart shows the number of RTGS available branches at the end of the year 2016, 2017 and 2018 respectively. The upward sloping line indicates the increase of RTGS services in the selected banks. Janata Bank Lmited has increased its RTGS branch network from 4 to 718 within 2018.

Chart 4: Number of RTGS Available branches in selected banks

Source: Primary

SURVEY RESULT FROM RESPONDENTS
Demography of respondents

A survey considered to be more effective when respondents are asked to complete a questionnaire having questions on age, gender or location. It's practically not meaningful to conduct a survey that does not have questions on demography. It is very essential to include these questions when conducting customer surveys. Demographic questions allow us to identify who are our target customers and what are their real philosophy. The Table 2 is on the demography of the survey.

TABLE 2: DEMOGRAPHY		
VARIABLES	**COUNT**	**PERCENTAGE %**
Age		
18-30	21	20.59%
31-40	43	42.16%
41-50	22	21.57%
51-60	11	10.78%
Over 60	05	4.90%
Total	102	100.00%
Gender		
Female	25	24.51%
Male	77	75.49%
Profession		
Business/Self Employed	24	23.53%
Service	63	61.76%
Student	10	9.80%
Others	05	4.90%
Average Monthly Amount of RTGS Transaction		
0-5 lac BDT	46	45.10%
6-10 lac BDT	08	7.84%
11-15 lac BDT	13	12.75%
Over 15 lac BDT	35	34.31%

Source: Primary

Table 3: Respondents views on RTGS

Statement	Theme	Mean	Std Deviation
RTGS is useful for me	Usefulness	4.20	0.52
I find it easy to use RTGS form	Easiness	3.63	0.78
I believe it is risk free to use RTGS	Riskiness	3.80	0.99
RTGS is available where and when required	Availability	3.01	1.11
Fees for RTGS is low	Affordability	2.54	1.04

Source: Primary

The respondents were asked to rate the level of adoption of RTGS on various issues like riskiness, easiness, availability, usefulness and affordability. They were given a five-point scale with statements describing the extent of agreeness or disagreeness. The mean and standard deviation along with the theme of statement are described in Table-3.
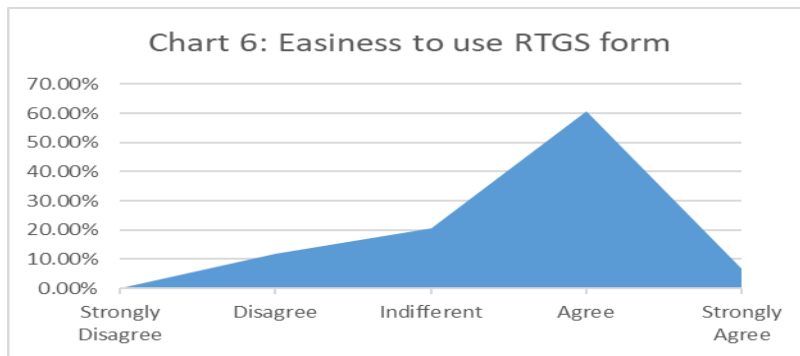
Respondents views on usefulness
The response from the clients on the usefulness is an important element of adoption of a service. The adoption of an electronic financial service like RTGS can be assumed from the respondent's view on usefulness.
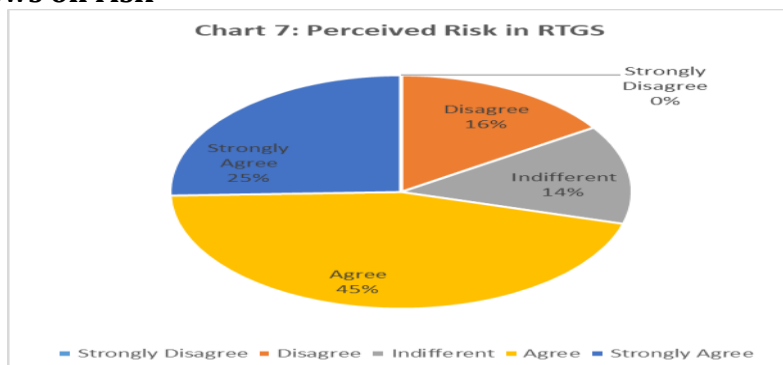
Chart 5: Usefulness of RTGS

I used Microsoft Excel 2016 to make chart using data from responses. The Chart 5 deals with the usefulness of RTGS. The respondents were requested to comment on the usefulness of RTGS. 70 of them were agreed that it is useful for them where none were strongly disagreed or disagreed. The mean of the statement is 4.20 and standard deviation is 0.52(see table 3). Here the low standard deviation is a sign of relatively lower dispersed data. The mean 4.20 indicates the higher usefulness of RTGS and hence it is assumed that RTGS is highly accepted by consumers.

Respondents views on ease of use

Chart 6: Easiness to use RTGS form

I would like you to look at the Chart 6, describing the ease of use of the RTGS. It can be seen from the area chart that a 60% of the respondents agreed in easiness of using RTGS. The statement was designed to judge the acceptance of form by the customers. A higher degree of positive response represents the higher adoption among the consumers. The mean of the theme is 3.63(see table 3) and it illustrates the image of RTGS in the financial industry. Here standard deviation is also below 1 and describes that the mean value is relatively more representing.

Respondents views on risk

Chart 7: Perceived Risk in RTGS

The pie Chart 7 is about the perceived risk in the RTGS. It clearly shows the relative risk assumed by the respondents. The customers were asked whether they believe that it is risk free to use RTGS. None strongly disagreed that RTGS is risk free. As you can see from chart 7, the 70% of respondents were either agreed or strongly agreed on the risk freeness of RTGS. Here the mean 3.80 from table 3 indicates the safety of the RTGS operation. As customer's opinion on that theme is that the customer's funds are safe, the adoption of RTGS is accelerated.
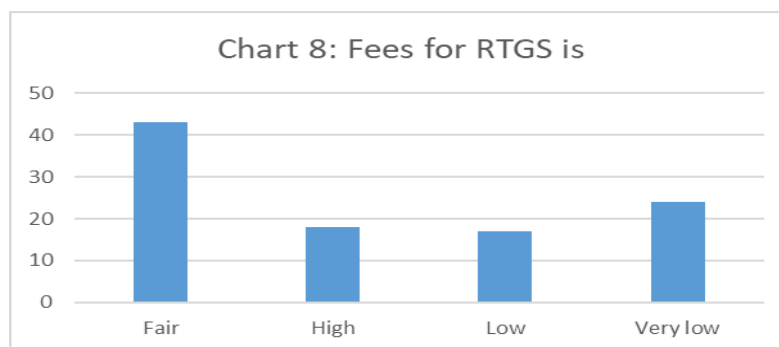
Respondents views on availability
Table 3 : Availability of RTGS

VARIABLES	COUNT	PERCENTAGE %
Availability		
Strongly Disagree	21	20.59%
Disagree	43	42.16%
Indifferent	22	21.57%
Agree	11	10.78%
Strongly Agree	05	4.90%
Total	102	100.00%

The SPSS program was used to calculate the descriptive statistics. The table 3 indicates the respondent's views on the availability of RTGS. The customers were asked whether they feel that RTGS is available where and when required. As RTGS is not available at all of the bank branches in Bangladesh customers have given their mixed opinion on that issue. A majority of customers(42.16%) disagreed that RTGS is available. The respective mean for the theme is 3.01 and Standard deviation is 1.11. Here the higher Standard deviation is representing a lower reliability on the mean.

Respondents views on fees

Chart 8: Fees for RTGS is

The respondents were asked to evaluate the fees they are paying for the RTGS service. The fees represent the affordability which is an important elements of adoption of any service. More than 40 of the respondents think that fees for the service is fair. Also a good number of respondents marked that the fee is low or very low. From table 3 you can see the mean for the statement is 2.54 and it indicates the higher affordability and higher adoption of service.

CONCLUSIONS
Real Time Gross Settlement(RTGS) is newly introduced to the banking and financial services market of Bangladesh. RTGS can be a strong alternative for existing payment systems. In Bangladesh, modern financial tools like ATM, Internet Banking, BEFTN, RTGS etc. are taking place of manual banking operations. Unfortunately, Bangladesh is far away from using high-

tech electronic financial services. 68.68% of the respondents are agreed about the usefulness of the RTGS system. Another 25.49% of the respondents were strongly agreed that RTGS is useful for them. The study also revealed the easiness of using the service. About 60% of the customers found it easy to fill the RTGS form provided by banks. Security issue is a major problem in technology adoption. You can see from the chart 7, the approximately 70% of respondents were either agreed or strongly agreed on the risk freeness of RTGS. At the point of affordability, a good number of respondents marked that the fee is low or very low for RTGS. The study is showed the acceptance RTGS as an electronic service providing tool. The respondents are not well familiar with RTGS. Hence the study conducted to identify the present status of its awareness among the users.

LIMITATIONS

The study was conducted in some selected bank branches within Dhaka city. Data were collected from 3 different banks in Bangladesh. Field survey was conducted among customers from the bank branches in Dhaka. As data was collected directly from customers within bank branches, some respondents hesitated to provide personal financial information. The shortage of books and publications on RTGS was a key problem of the study. Collection of data from bank officials was also a problem for the research. Some data were collected from respective department of different banks. The officials were hesitating to supply more data to maintain secrecy. Moreover, interviews with bank officials were completed in a hurry. Some data were collected from orally and unsigned as bank officials were taking time to provide data. I tried to interviewe only RTGS customers. However, there were a lot of customer who didn't know the RTGS.

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