

Customers' Satisfaction and ATM Services: The Case of Bangladesh

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The purpose of this study is to identify the factors which affects customers' satisfaction level on ATM services in Bangladesh, for instance, speed of the ATM, location and number of ATM booth, sufficient amount of cash in the ATM, quality of notes, network capacity, security, safety and privacy of ATM, power backup, manners of guards and their consent to other related issues on ATM services. To carry out this study, a survey was conducted and 200 copies of a structured questionnaire were distributed to the banks' customers'. Out of these, 196 of first part and 178 of satisfaction measurement factors were returned. Various statistical analytical tools and tests, such as, descriptive analysis, Z-test, and ANOVA test were conducted to test the hypothesis and collected data. The study finds that security/safety/privacy of ATM is ranked number one and represents maximum satisfaction of ATM users. The customers' are satisfied with the PIN (Personal Identification Number) of ATM card and they are also happy with the cash withdrawal accuracy/swiftness, quality of notes, manners of ATM guard, speed of the delivery of ATM cards, power backup of ATM, pay-in-slips in the ATM, Charge/fee/cost of ATM cards, maximum limit of cash withdrawals, sufficient cash in ATM and the overall satisfaction of the customers' represented in the last row which came out to be 3.8539 slightly lower than 4. However, customers' are not satisfied with the sufficient number of ATM booth, network capacity of ATM and complaint book in the ATM.

JEL Codes: G21, G24, L86 and M15.

1. Introduction

Automated Teller Machine (ATM) is the most modern computerized telecommunication electronic device that enables customers' to conduct financial transactions generally outside the normal banking hours without the need of a human clerk or a bank teller. To ensure security, safety, privacy and accuracy the banking authority gives to their customers' a plastic ATM card with a magnetic strip that contains a unique card number and Personal Identification Number (PIN). Security is provided by the customer entering a personal identification number (PIN), (Adepoju & Alhassan, 2010). ATMs are offering 24 hours banking services to bank customers' like cash withdrawal, funds transfer, balance inquiry, card to card transfer, bill payment, accept deposits etc. (Kumbhar, 2011). As far as the customer satisfaction is concerned with regard to e-banking services, ATM services play an important role as they make easy of banking transactions for customers' (Premalatha & Sundaram, 2012).

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Since the usage of ATM has been increasing day by day in Bangladesh and the users of ATM argue that ATM and other technology based transaction is not enough safe and secured. On the other hand, a lot of people think that it is safe, secured, and ease to transfer funds from one account to another account, so it ensures cash withdrawal accuracy, save time and cost.

Besides, there are some other factors such as PIN confidentiality, sufficient number of ATM, available cash in the ATM, quality of notes, network performance, and security, safety and privacy of ATM are the other factors which might influences the customers' satisfaction on ATM services. Thus, this is very important to have an in-depth analysis for the ATM services provider to identify the factors influencing the customers' satisfaction on ATM services and to have clear understanding of the factors which will enable banking institutions to develop suitable business strategies, process and business plan and to enhance ATM services to increase customers' satisfaction.

There are some findings in this research study which are similar to the findings of the previous studies related to the customers' satisfaction while other findings are different. Joseph and Stone (2003) and Mcandrews (2003) conducted a research and find out that secure and convenient location, adequate number of ATM, user-friendly system and functionality of ATM play important role in customer satisfaction. Islam et al. (2007) identified in their study that location, personnel response, quality of currency notes, promptness of card delivery and performance of ATM were positively and significantly related to customers' satisfaction. They also found that the security, frequent breakdown of machine, and insufficient number of ATM were major contributors of customers dissatisfaction. Nayak and Yadav (2014) found that respondents are dissatisfied with aspects such as complaint book availability, location of the ATM, number of ATMs and availability of generator/power backup. Patricio et al. (2003) undertook a qualitative study of a Portuguese bank regarding customers' use of multichannel offerings. The study identified accessibility and speed of operation as strong predictors of customers' satisfaction, whereas security dimension and technical failures were main causes of dissatisfaction.

This research study has been conducted with the main objective of determining the factors which affect the level of customers' satisfaction on ATM services in Bangladesh. Besides this research study has also been conducted to know the availability of cash in ATM, quality of notes and to verify the security, safety and privacy of ATM.

This research paper is divided into several segments. In the first segment the relevant literatures have been analyzed to find out research gap. In the second segment research methodology and hypotheses have been developed relating to the study. The third segment described collected data by using pie chart, bar chart, column chart and table and influencing factors of customers' satisfaction level have been identified based on previous study. In the fourth segment of the paper tests of hypotheses are done by using Microsoft Excel 2013 and analysis of results. Moreover, in the last segment practical implications of the research, future research scope, findings and limitations of the study have been highlighted.

2. Literature Review

The concept of ATM is well known modern technology and is developing regularly. Undoubtedly, a reasonable number of theoretical and empirical researches have been done throughout the world regarding customers' satisfaction level on ATM services. Richard L. Oliver (1997) defined customer satisfaction as "satisfaction is the customers fulfilled response. It is a judgment that a product or service feature, or the product or service itself, provides a pleasurable level of consumption related-fulfillment". Johnson A. Edosomwan (1993) said in his book that "a satisfied customer will recommend excellent products and services to their friends and help the enterprise to increase its market share and profitability".

McAndrews (2003) talked about the various utilities of ATMs which has given world wide popularity. The utilities include withdrawal of cash as per convenience of the customers than during the banking hours at branches. Besides providing off time and off shore services, there is reduction of cost of servicing. Humphrey et al., (2003) in their study came to the conclusion that electronic payments are considerably cheaper than their paper based alternatives. Similarly ATMs are most cost efficient way to deliver certain depositors services than branch offices. They analyzed that the share of electric payments in 12 European countries rose from 0.43 in 1987 to 0.79 in 1999 and ATMs expanded while the number of branch offices was constant, bank operating costs are estimated to be \$32 billion lower than they otherwise might have been resulting a saving of 0.38% of 12 nations GDP.

Adepoju and Alhassan (2010) stated that ATMs were originally developed as just cash dispensers; they have evolved to include many other bank-related functions. In some countries, especially those whose benefit from a fully integrated cross-bank ATM network, ATMs include many functions which are not directly related to the management of one's own bank account, such as: Paying routine bills, fee and taxes (utilities, phone bills, social security, legal fees, taxes etc.), Printing bank statement, Updating passbooks, Loading monetary value into stored value cards, Purchasing and so on.

Since banking industries have been providing numerous services through the ATM to their customers' and the usage of ATM has also been enhanced over the last two decades and therefore, it is very important to determine whether the customers are satisfied or dissatisfied with the ATM services with respect to some influencing factors.

Singh and Komal (2009) argued that there is direct relation between fee charged and customer satisfaction. Fee charged by the banks is one of the variables taken for checking customer satisfaction level. If customer feels that the fee charged by the bank is reasonable then he is satisfied and vice-versa.

Moutinho and Brownlie (1989) found that accessibility and location of ATMs significantly affect users' satisfaction. Tong (2009) proposed that customer perceived satisfaction is an essential determinant of success in the technology-based delivery channels. Researchers also have stated that users' satisfaction is an essential determinant of success of the technology-based delivery channels. Lymeropoulos et al., (2006); Gursoy and Swanger

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(2007) who suggested that the ability of firms to satisfy customer needs is a key to their long-term business success. Most studies on customer satisfaction have been guided by confirmation/disconfirmation theory which posits that customers' compare perceived service with expected service the outcome of which may determine whether they are satisfied, dissatisfied or delighted.

Khan (2010) argued that ATM service quality positively and significantly contributes toward customer satisfaction. The developments of technologies have enabled organizations to provide superior services for customers' satisfaction (Antony et al., 2003). Jabnoun and Al-Tamimi (2003) found that service quality in banks is critical for satisfaction and retention of customers'. Islam et al., (2007) found that significant relationship of ATM service quality with customers' satisfaction. Dilijonas, Krikscuiunen, Sakalauskas and Simutis (2009) mentioned that adequate numbers of ATMs, convenient and secure location, and user-friendly system, speed, minimum errors, high uptime, cash backup, cost and service coverage are essential service quality aspects of ATM service. Liao and Cheung (2002) argued that expectation of security is essential in shaping customers' perception of service quality.

In an another study in Bangladesh found that 24 hours service, accuracy, and convenient locations were the main predictors of customer satisfaction (Shamsuddoha, et al., 2005). Yoo and Donthu (2001) and Szymanski and Hise (2000) empirically found that customer's perception of security and privacy played an essential role in their satisfaction. Madu and Madu (2002) found that the concern of customers about security and privacy, while using this service, is a major cause of their dissatisfaction.

Sing (2011) found that availability of cash has the highest overall customer satisfaction (70.75%) followed by location/proximity of ATM (60.5%) and time to process request (56.5%). The study also found that response to query (47.75%), availability of shared/networked ATM (45.5%) and number of ATMs in locality has the lowest satisfaction level (44%). Shamsuddoha, Chowdhury and Ahsan (2005) found that 24 hours service, accuracy and convenient location are the main predictors of customer satisfaction. The study also indicates lack of privacy in executing the transaction, fear of safety and complexity of the machine as the major cause of concern of the customers. Adeniran and Junaidu (2014) investigated that the extent to which Automated Teller Machine (ATM) services in terms of their ease of use, availability of money, transaction cost and service security affect the customer satisfaction It also indicates that customers are satisfied with the ATM ease of use, transaction cost and service security but not satisfied with the ATM availability of money.

In the past studies have been mentioned that fee charged and cost, accessibility and convenient location of ATM, ATM service quality, speed, high up time, cash backup and availability of cash in the ATM, adequate numbers of ATM, accuracy, security and privacy of ATM are the major causes of satisfaction and dissatisfaction of customers but Sing (2011) in his study found that customer satisfaction is the highest on availability of cash in the ATM (70.75%) and the lowest satisfaction on the number of ATMs in the locality (44%).

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Since most of the literatures are not found the extent of customers' satisfaction on ATM services based on influencing factors in Bangladesh, this paper is an attempt to reduce the research gap in this regard. Thus, on the basis of the above literatures this research paper aim at identifying the factors affecting customers' satisfaction level on ATM services in Bangladesh. Particularly, this research tries to assess level of customers' satisfaction on ATMs services in Bangladesh by investigated the role of five important factors in achieving the anticipated satisfaction such as confidentiality of the PIN, available cash in ATM, quality of notes, the network capacity of ATM and security, safety and privacy of ATM.

3. Research Hypotheses

Hypothesis 1: There is positive and significant relationship between PIN (Personal Identification Number) confidentiality and customers' satisfaction level.

Hypothesis 2: The satisfaction measurement aspects regarding ATM services are same.

Hypothesis 3: There is positive and significant relationship between available cash and customers' satisfaction level.

Hypothesis 4: There is positive and significant relationship between network capacity and customers' satisfaction level.

Hypothesis 5: There is positive and significant relationship between security, safety and privacy and customers' satisfaction level.

4. Research Methodology

4.1 Data Collection

This research study is based on primary data. To achieve the study objectives, a well design structured questionnaire has been prepared and distributed among the study respondents selected on random sample basis. The questionnaire was divided into two parts; first part of questionnaire contains demographic characteristics and ATM card related information of ATM card holders and second part of the questionnaire contains factors which affect satisfaction level of customers' on ATM services. However, 200 questionnaires were distributed among the ATM card holders in the Sylhet City in Bangladesh and asked them to fill-up questionnaires directly as most of them found in the public areas, such as, ATMs location, streets and branches of the bank. Thus, all the distributed questionnaires were collected after filling up by the ATM card users. Out of 200 questionnaires sent 196 questionnaires of first part and 178 questionnaires of second part filled up and have been backed by the ATM users and 5 of those filled questionnaires of first part and 7 of filled questionnaires of second part have been rejected due to insufficient information. Thus, rate of duly filled returned questionnaires of first part is 95% and second part is 85%. Out of 196 respondents 120 respondents (61.22%) are continuously using ATM card for conducting transactions while 76 respondents (38.78%) are not using ATM due to different kinds of problem or dissatisfaction on ATM services though they are highly interested to use ATM for transaction.

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4.2 Study Period and Sample Size

At present most of the banks in Bangladesh are providing ATM services to their customers namely, Dutch Bangla Bank Limited, Eastern Bank Limited, Brac Bank Limited, Bank Asia, Prime Bank, The City Bank, HSBC etc. The population of the study is entire users of ATM in Bangladesh but data have been collected from a sample of 200 customers who usages ATM card of different banks in the Sylhet City in Bangladesh. The respondents include – University students, employees and business personnel and the average age of the customers was 20 to 35 years. In addition, 60% of the respondents were male and 40% were female. Moreover, this study is conducted among the ATM card holders of various banks by collecting data in four months period between September to December, 2013 among the customers whose age range is 20 to 35 years. Since, the research study is based on primary data, four months data collection period is thought to be enough to collect data from the Sylhet City in Bangladesh through questioning method. At present, almost 50 banks are providing limited ATM services but only Dutch Bangla Bank Limited is providing full-fledged ATM services to their customers in Bangladesh and 200 hundred customers of the different banks of age range of 20 to 35 is representative.

4.3 Questionnaire

In order to develop a questionnaire, personal interviews were carried out among the faculty members who uses ATM card at Metropolitan University, Sylhet and undergraduate and post graduate students who hold ATM card. Moreover, questionnaires item were selected on the basis of literature review and discussion with the customers of the banks what services they expect from the banking authorities. Five point Likert scale was used in formatting the satisfaction measurement aspects of customers in the questionnaire ranging from '5' denoted as highly satisfied, '4' denoted as satisfied, '3' as nether satisfied nor dissatisfied, '2' as dissatisfied and '1' as highly dissatisfied. Close-ended and open ended questions were included in the questionnaire.

4.4 Statistical Tools and Techniques Employed

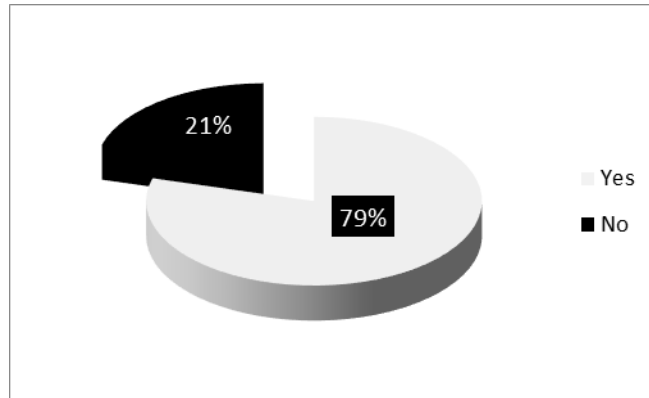
The collected data have been analyzed by using various descriptive statistics such as mean or average, frequency or weight, rank, percentages, statistical graphs, charts and tables and ANOVA (analysis of variance). In general, in the study statistical graphs, charts and tables were used to indicate overall customers' satisfaction level on ATM services in Bangladesh. In addition, Z-test, ANOVA: Single factor, were employed to test the hypotheses of the study and to find out the significant factors which will help to determine the customers' satisfaction level on ATM services.

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5. Data Analysis

5.1 Findings and Factors Affects Satisfaction Level

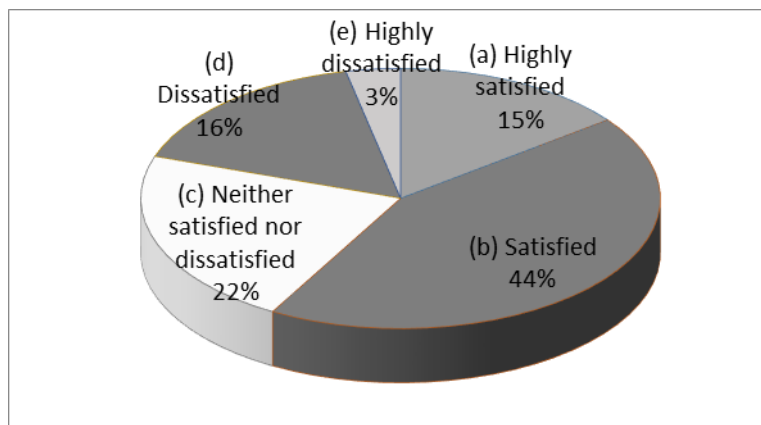
Graph 1 Charge free ATM card



Source: Based on primary data

Graph 1 shows the anticipation of charge free ATM card and 79% ATM card users' expect charge free ATM card and they think that banking authorities should offer ATM card at free of cost and only 21% respondents do not anticipate charge free ATM card. Sawalqa (2012) argued that banks should not charge their customers any fees against their usage of ATMs. This is because banks use their customers' cash balances in its credit facilities which create credit interest for banks in general. Accordingly, banks should either decrease or should not charge any cost and fee regarding ATM services. To achieve the customers' satisfaction on ATM services banks' should provide charge free ATM card to their customers'.

Graph 2 Charge/fee/cost of ATM card



Source: Based on primary data

Graph 2 indicates the level of customers' satisfaction concerning charge, fee and cost of ATM card which are paid by the customers' for using ATM card. Above pie chart shows that 15% and 44% customers are highly satisfied and satisfied respectively as well as 22%, 16% and

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3% customers are neither satisfied nor dissatisfied, dissatisfied and highly dissatisfied respectively. At the end of the analysis it has found that 59% customers on an average satisfied regarding charge, fee and cost of ATM card. On the other hand, remaining 41% customers are not satisfied. Sing and Komal (2009) found that fee charged by the banks is one the variables taken for checking customer satisfaction level. If customer feels that the fee charged by the bank is reasonable then he is satisfied and vice-versa. However, it can be argued that ATMs reduce the costs of servicing some customer demands using banks' counters (Massoud, Saunders & Scholnick, 2006; Mcandrews, 2003).

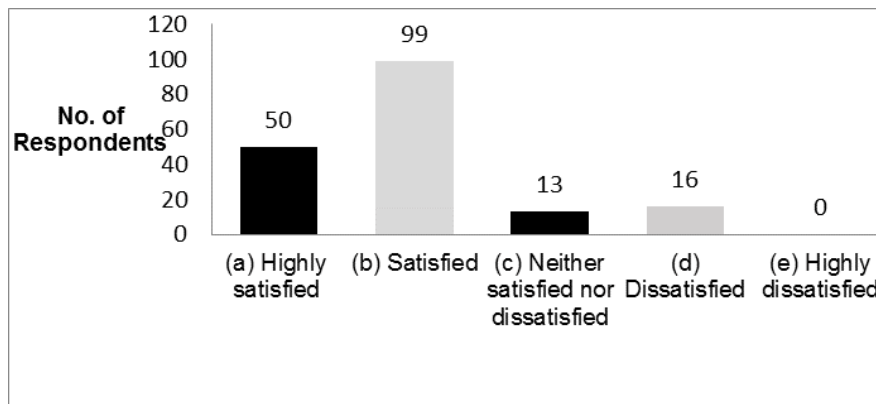
Table 1 Number of ATM booth

Total Respondents'	178	100%
(a) Highly satisfied	18	10%
(b) Satisfied	65	37%
(c) Neither satisfied nor dissatisfied	46	26%
(d) Dissatisfied	41	23%
(e) Highly dissatisfied	8	4%

Source: Based on primary data

Table 1 shows the level of customers' satisfaction regarding number of ATM booth in the Sylhet City in Bangladesh. The table 1 also displays that only 10% and 37% customers are highly satisfied and satisfied respectively involving to the number of ATM booth. On the other hand, 4%, 23% and 26% customers are highly dissatisfied, dissatisfied and neither satisfied nor dissatisfied respectively. It found that less than 50% customers are satisfied concerning the number of ATM booth in the Sylhet City in Bangladesh. On the other hand, almost 50% ATM users are not satisfied concerning the number of ATM booth in the Sylhet City in Bangladesh.

Graph 3 Personal Identification Number (PIN)



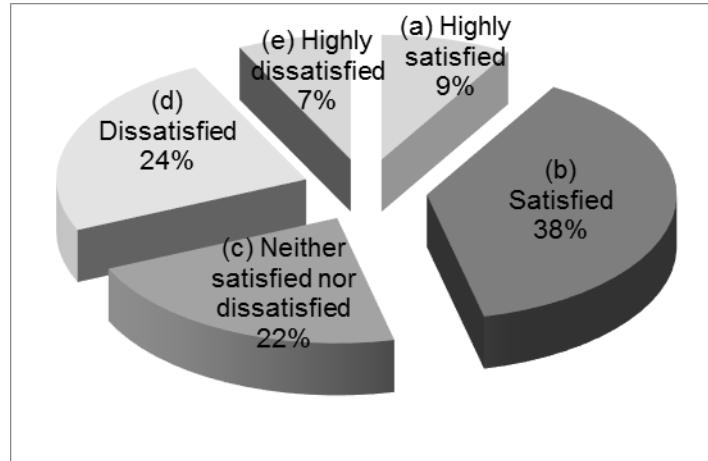
Source: Field survey

The vertical axis of the graph 3 displays no. of respondents and horizontal axis denotes customers' satisfaction level in relation to Personal Identification Number (PIN) aspect. Out of 178 respondents 50 respondents are highly satisfied and 99 respondents or customers are

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satisfied. In contrast, only 13, 16 and 0 customers are neither satisfied nor dissatisfied, dissatisfied and highly dissatisfied respectively. In conclusion, it has proved that almost 149 or 84% customers are satisfied with PIN security of ATM card.

Graph 4 Network capacity



Source: Based on primary data

Graph 4 shows network capacity of ATM and customers' satisfaction level. The above pie chart represents that only 9% and 38% customers are highly satisfied and satisfied respectively. The above pie chart also represents that 22%, 24% and 7% customers are neither satisfied nor dissatisfied, dissatisfied and highly dissatisfied respectively. From the above analysis it has found that less than 50% customers are normally satisfied and happy relating to network capacity of ATM and almost 50% customers are not satisfied regarding network capacity of ATM. Hence, banking company should pay more importance to enhance network capacity of ATM.

Table 2 Available cash in ATM

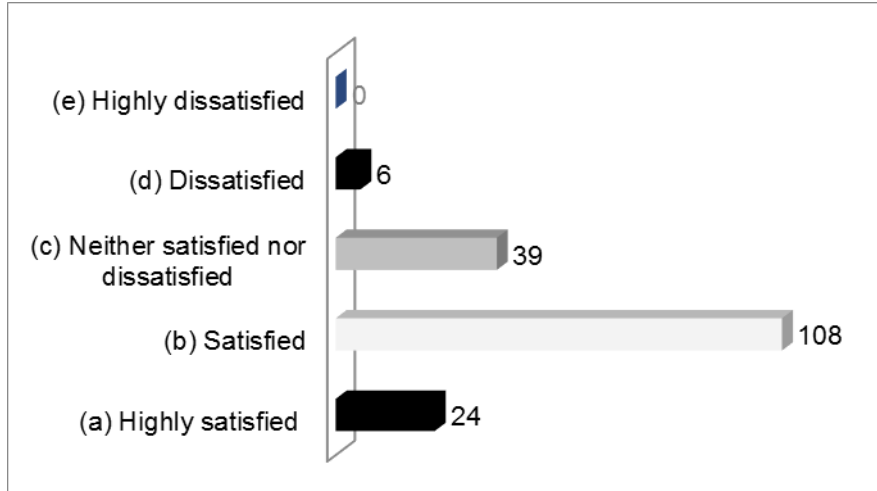
Total Respondents	178	100%
(a) Highly satisfied	22	12%
(b) Satisfied	79	44%
(c) Neither satisfied nor dissatisfied	41	23%
(d) Dissatisfied	33	19%
(e) Highly dissatisfied	3	2%

Source: Field survey

Table 2 represents customers' satisfaction level with regard to available cash in ATM. Out of 178 respondents 22 or 12% and 79 or 44% customers are highly satisfied and satisfied respectively about available cash in ATM. Remaining 41 or 23%, 33 or 19% and 3 or 2% customers are neither satisfied nor dissatisfied, dissatisfied and highly dissatisfied respectively. It has found that about 56% customers are usually satisfied regarding available cash in ATM. Based on the analysis of above table found that about 44% customers are not typically satisfied concerning available cash in ATM.

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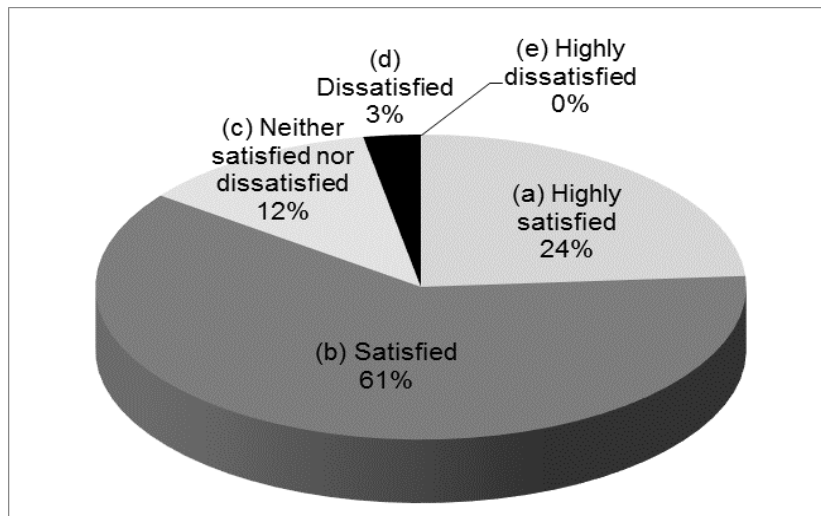
Graph 5 Quality of notes



Source: Based on primary data

Graph 5 shows level of customers' satisfaction regarding quality of notes. Out of 177 respondents 24 and 108 respondents are highly satisfied and satisfied respectively concerning qualities of notes. Remaining 39, 6 and 0 customers are neither satisfied nor dissatisfied, dissatisfied and highly dissatisfied respectively. From the analysis of the above graph found that almost 132 or 75% customers are usually satisfied relating to quality of notes.

Graph 6 Security/safety/privacy



Source: Based on primary data

The above pie chart indicates customers' satisfaction level regarding security, safety and privacy of ATM. The graph 6 also represents that 24% and 61% customers are highly satisfied and satisfied respectively regarding security, safety and privacy of ATM booth. Only 12%, 3% and 0% customers are neither satisfied nor dissatisfied, dissatisfied and highly dissatisfied respectively. Based on the analysis of above pie chart it has evident that 85% customers are

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satisfied regarding the security, safety and privacy of ATM. In contrary, only 15% customers are not satisfied.

5.2 Customers' Satisfaction Level

Survey findings with regard to the customers' satisfaction level measurement with various factors shown in the following table:

Table 3 Customers' satisfaction level with different factors

Serial No [1]	Satisfaction Criteria [2]	Number of Respondents [3]	Weighted Sum [4]	Average Satisfaction [5]	Rank [6]
1.	Charge/fee/cost of ATM card	177	619	3.4972	9
2.	Speed of the delivery of ATM card	178	675	3.7921	6
3.	Sufficient number of ATM Booth	178	578	3.2472	12
4.	PIN (Personal Identification Number)	178	717	4.0281	2
5.	Maximum limit of cash withdrawal	176	613	3.4830	10
6.	Network capacity	177	559	3.1582	13
7.	Sufficient cash in ATM Booth	178	618	3.4719	11
8.	Quality of Notes	177	681	3.8475	4
9.	Available power backup / Generator	176	647	3.6761	7
10.	Manners of ATM guard / personnel	177	679	3.8362	5
11.	Complaint Book	174	543	3.1207	15
12.	Availability of pay in slips	174	622	3.5747	8
13.	Cash withdrawal (accuracy / swiftness)	176	678	3.8523	3
14.	Security / safety / privacy	177	715	4.0395	1
15.	Overall satisfaction	178	686	3.8539	-

Source: Field Survey

Table 3 shows that average satisfaction level of ATM customers are more than neither satisfied nor dissatisfied which is denoted by 3 with respect to all aspects. Furthermore, the mean score was found near about similar to 3 of complain book at ATM booth, network capacity of ATM and sufficient number of ATM in the Sylhet City in Bangladesh. Therefore, banking companies should give more emphasize about these aspects and they have more opportunity to improve these aspects.

In addition, on the basis of weighted sum, ranking is set against various aspects of ATM with a view to know which aspect adds most to maximize the customers' satisfaction level on ATM services. It has found from the above table 3 that security/safety/privacy of ATM is ranking 1 and represents maximum satisfaction of ATMs clients. The customers are satisfied with the PIN (Personal Identification Number) of ATM card and they are also happy with the cash withdrawal accuracy/swiftness, quality of notes, manners of ATM guard, speed of the delivery of ATM cards, power backup of ATM, pay-in-slips in the ATM, charge/fee/cost of ATM cards, maximum limit of cash withdrawals, sufficient cash in ATM and the overall satisfaction of the customers' represented in the last row which came out to be 3.8539 slightly lower than 4. On

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the other hand, customers are not satisfied with the sufficient number of ATM booth, network capacity of ATM and complaint book in the ATM booth.

6. Test of Hypothesis

6.1 Hypothesis 1

Ho: There is positive and significant relationship between PIN (Personal Identification Number) confidentiality and customers' satisfaction level.

Ha: There is no positive and significant relationship between PIN (Personal Identification Number) confidentiality and customers' satisfaction level.

The question relating to hypothesis was: Is PIN (Personal Identification Number) strictly confidential to you?

Table 4- On the basis of the responses of the 196 respondents' the following is designed:

Scale of Responses	Number of Responses	Percentage
Yes	185	94%
No	11	6%
Total collected data (2014)	196	100%

Source: Field Survey

The table 4 represents that out of 196 customers 185 agreed that PIN (Personal Identification Number) is strictly confidential to them and it has positive and significant relationship with customers' satisfaction on ATM services. In contrary, only 11 customers do not agree that Personal Identification Number (PIN) is strictly confidential to them and it has no positive and significant relationship with customers' satisfaction on ATM services. Accordingly, 185 customers supported Null Hypothesis (Ho).

Formulating the Hypothesis: The researcher formulated the null hypothesis (Ho), that the number of success sample:

X is equal to 185: Ho=185

X is not equal to 185: Ha≠185

Formula of Z-test is,

$$\begin{aligned} Z &= \frac{\frac{X}{n} - p}{\sqrt{p}} \\ &= \frac{\frac{X}{n} - p}{\sqrt{\frac{p(1-p)}{n}}} \\ &= 12.43 \end{aligned}$$

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Since calculated value of Z is 12.43 which is much greater than Z-table value (i.e. ± 1.64) at 5% level of significance. It falls inside the acceptance region. Therefore, null hypothesis (H_0) is accepted and alternative hypothesis (H_a) must be rejected. Consequently, it can be said that, there is positive and significant relationship between Personal Identification Number (PIN) confidentiality and customers' satisfaction level.

6.2 Hypothesis 2

H_0 : The satisfaction measurement aspects regarding ATM services are same.

H_a : The satisfaction measurement aspects regarding ATM services are not same.

Table 5 ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	214.5939	13	16.5072	20.2374	4.84E-46	1.7241
Within Groups	2021.247	2478	0.815677			
Total	2235.841	2491				

Source: Field Survey

Table 5 shows that calculated F value is 20.2374 which are much greater than the F-critical value of 1.7241 as well as the p-value of 4.84E-46 at 5% level of significance. Therefore, based on the above ANOVA Null Hypothesis (H_0) must be rejected and Alternative Hypothesis (H_a) is accepted. In conclude it can be said that, satisfaction measurement aspects regarding ATM services are not same.

6.3 Hypothesis 3

H_0 : There is no positive and significant relationship between available cash in the ATM and customers' satisfaction level.

H_a : There is positive and significant relationship between available cash in the ATM and customers' satisfaction level.

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Z-Test: Two Sample for Means

	<i>Variable 1</i>	<i>Variable 2</i>
Mean	3.853932584	3.471910112
Known Variance	0.2949	0.9738
Observations	178	178
Hypothesized Mean Difference	0	
z	4.52500894	
P(Z<=z) one-tail	3.01965E-06	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	6.0393E-06	
z Critical two-tail	1.959963985	

Source: Field Survey

Since the p value (0.000003016 one-tail and 0.000006039 two-tail) is far less than 0.05, null hypothesis can be rejected and alternative must be accepted. It can be concluded that there is a positive and significant relationship between available cash in the ATM and customers' satisfaction level. Furthermore, it can be said that available cash in the ATM is one of the important factors which affects customers' satisfaction level.

6.4 Hypothesis 4

Ho: There is no positive and significant relationship between network capacity and customers' satisfaction level.

Ha: There is positive and significant relationship between network capacity and customers' satisfaction level.

Z-Test: Two Samples for Means

	<i>Variable 1</i>	<i>Variable 2</i>
Mean	3.853932584	3.157303371
Known Variance	0.2949	1.2362
Observations	178	178
Hypothesized Mean Difference	0	
z	7.511210026	
P(Z<=z) one-tail	2.93099E-14	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	5.86198E-14	
z Critical two-tail	1.959963985	

Source: Field Survey

Based on the above Z-test the null hypothesis can be rejected because p value (2.93099E-14 one-tail and 5.86198E-14 two-tail) is far lower than 0.05 or 95% confidence level. Hence, it can be concluded that network capacity of ATM is one of the important factors which has direct impact on customers' satisfaction level.

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6.5 Hypothesis 5

Ho: There is no positive and significant relationship between security, safety and privacy in the ATM and customers' satisfaction level.

Ha: There is positive and significant relationship between security, safety and privacy in the ATM and customers' satisfaction level.

Z-Test: Two Samples for Mean

	<i>Variable 1</i>	<i>Variable 2</i>
Mean	4.050561798	3.853933
Known Variance	0.5609	0.2949
Observations	178	178
Hypothesized Mean Difference	0	
z	2.835775866	
P(Z<=z) one-tail	0.002285726	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	0.004571452	
z Critical two-tail	1.959963985	

Source: Field Survey

Since the p value (0.002285726 one-tail and 0.004571452 two-tail) is less than 0.05, then the null hypothesis can be rejected and it can be concluded that security, safety and privacy at ATM has influence on customers' satisfaction level and as well as security, safety and privacy at the ATM has significant relationship with the satisfaction level of customers.

7. Analysis of Results

The main objective of this study is to identify the factors affecting customers' satisfaction level on ATM services in Bangladesh (i.e. confidentiality of the PIN, sufficient amount of cash, quality of notes, network capacity, security, safety and privacy). Notably, there is no study that has examined all these variables at the same time. To achieve study objectives five hypotheses were developed and tested by using Z-test and ANOVA. Based on the results of Z-test and ANOVA found that there is positive and significant relationship between PIN (Personal Identification Number) confidentiality, available cash in the ATM, quality of notes, network capacity, security, safety and privacy and customers' satisfaction level as well as customers' satisfaction measurement aspects are not same.

In respect to the H₃, the results indicated that sufficient amount of cash has positive and significant relationship with customers' satisfaction level at 0.05 level of significant. Moreover, it has found that the customers' are highly satisfied with the availability of cash in the ATMs and the quality of currency notes in the ATMs' being ranked 1st and 2nd (Kumaran, 2011). According to the H₄, the results indicate that the network capacity of ATM has positive and significant impact on the customers' satisfaction level. According to the H₅, the results indicate that security, safety and privacy have the most significant impact on the customers' satisfaction level. Szymanski and Hise (2000) empirically found that customers' perception of security and privacy played an essential role in their satisfaction.

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The concern of customers' about security and privacy, while using this service, is a major cause of their dissatisfaction (Madu & Madu, 2002). This is as most of previous research in e-banking gave a big weight to this aspect (e.g. Maenpaa et al. 2008; Mirza et al. 2009). Accordingly, based on the above found results indicated that the network capacity, security, safety and privacy is the main concern of ATMs customers' in Bangladesh as well as they were the most important factors to measure customers' satisfaction level on ATM services.

8. Practical Implications of the Research

The results of the study showed that only 61.22% customers are currently using ATM while rest of the 38.78% are not using ATM even they have interest to use ATM for their daily transaction. Therefore, this is a great opportunity for the banking industries to enhance more usage of ATM with ensuring better ATM services to their customers. This research study revealed that customers are dissatisfied with the network performance and numbers of ATM booth in the Sylhet City in Bangladesh and these are also influencing and crucial factors which affect the usage of ATM and satisfaction or dissatisfaction on ATM services. Therefore, banking authorities should improve ATM services to enhance satisfaction of ATM users and more transaction through ATM.

9. Future Research Scope

This research focused on various satisfaction measurement factors and their effect on customers' satisfaction level on ATM services in Bangladesh. Thus, the study unlocks many opportunities for future studies to study ATM services and to find out the factors which may affect customers' satisfaction level on ATM services in Bangladesh and other developing countries. The sample of current study covered only the Sylhet City in Bangladesh. Future study may have an opportunity to cover the whole regions of Bangladesh.

10. Findings of the Study

On the basis of the former analysis following interpretation can be drawn:

- (i) The customers are almost highly satisfied with the security/safety/privacy and Personal Identification Number (PIN) of the ATM card being ranked as 1st and 2nd according to the weighted average mean of 4.0395 and 4.0281 (Table 3) respectively. In addition almost 85% customers (Graph 6) are satisfied concerning the security, safety and privacy of ATM.
- (ii) Moreover 59% customers (Graph 2) are satisfied regarding cost and fee charged on ATM card and remaining 41% are not satisfied. On the other hand, almost 79% customers (Graph 1) expects charge free ATM card.
- (iii) Only 56% customers (Table 2) are satisfied with the available cash in ATM and rest of 44% customers are not satisfied. In addition 75% customers (Graph 5) are satisfied with quality of notes.

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- (iv) Almost 84% customers are satisfied with PIN security of ATM (Graph 3) and about 53% customers (Graph 4) are not satisfied with the network capacity of ATM.
- (v) The customers are equally satisfied concerning accuracy/swiftness of cash withdrawal and quality of notes through ATM as well as they are satisfied with the manners of ATM guard/personnel, speed of the delivery of the ATM card and available power backup in the ATM (Table 3).
- (vii) Almost 53% customers (Table 1) are not satisfied with the sufficient number of ATM booth. The respondents have made strong recommendations connecting to these aspects when they were asked to do so.

11. Conclusion

This research study successfully identified the influencing factors of customers' satisfaction level on ATM services in Bangladesh. The furthest, significant thing found in the study revealed that customers are highly satisfied with the security/safety/privacy and confidentiality of Personal Identification Number (PIN) of the ATM card. On the other hand, customers are not satisfied with network capacity of ATM and sufficient number of ATM booth in the Sylhet City in Bangladesh. Thus, this research has provided valuable information and knowledge to the banking authorities to enhance better ATM services to enrich customers' satisfaction level on ATM services in order to survive in the competitive world. Henceforth, bank management should reflect the recommendations of the customers and must take indispensable steps to increase ATM services to enhance ATM usage. One of the limitations of this study is that primary data have been collected only from the Sylhet City in Bangladesh. This study would have provided with better applications if it were not limited within the Sylhet City in Bangladesh among the customers' of ATM having age range of 20 to 35 years as including different age group from whole region of Bangladesh may provide better results in future. It is evident that PIN (Personal Identification Number) confidentiality, available cash in the ATM, quality of notes, the network capacity, security, safety and privacy are not the only determining factors that influence customers' satisfaction level on ATM services. The other factors that contribute to customers' satisfaction include trust, value, and image of the bank (Ranaweera & Prabhu, 2003). There are many other factors disregarded in this study which may have important effect on the customers' satisfaction level on ATM services. In spite of that, this study examined five important factors and this study makes a fruitful viewpoint for further research to incorporate many other factors which may have influence on customers' satisfaction on ATM services.

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