

A CASE STUDY ON CUSTOMER SATISFACTION TOWARDS ONLINE BANKING IN BANGLADESH

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Science in Computer Science and Engineering

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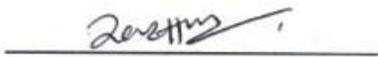


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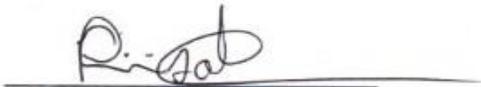


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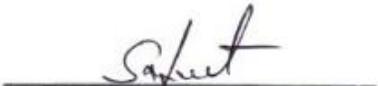


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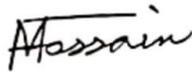
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DECLARATION

We hereby declare that, this thesis has been done by us under the supervision **DR MD FOKHRA Y HOSSAIN, Professor, Department of CSE** Daffodil International University. We also declare that neither this thesis nor any part of this thesis has been submitted elsewhere for award of any degree or diploma.

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ABSTRACT

In the technological era of today. Every task in daily life is considerably simpler than it was in the before. Technology has made everything computerized. Banking is also the one from all of them. Technology has resulted in many improvements in the banking industry. Every task in the banking sector is digitized, from account opening to money transfers through e-banking, eliminating the need for customers to visit banks and wait in long lines. This makes work for both customers and banking institutions easy, efficient, and quick. E-banking also encourages competition among banks to offer their customers better services and draw in a growing number of customers. This study aimed to explore the moderating result of these customers' faith in online banking services on customer satisfaction. Additionally, the goal of this study is to measure overall consumer satisfaction. Every organization's most difficult duty is ensuring customer pleasure. This paper attempted to determine the level of customer satisfaction. 500 randomly chosen and conveniently placed individuals are surveyed to achieve this. To analyze the data it was used Matplotlib for plotting and visualization and use VS Code as an Editor. That result of the research is shows that Security, Online Bill Pay, Fund Transfer, Any time anywhere use, Web Design, Convenience and speed are directly related to the Customer Satisfaction towards Online Banking in Bangladesh.

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CHAPTER 1

INTRODUCTION

1.1 Background of the Research

The internet is one of the most significant human inventions of all time, and in this age of technology, it has helped to create a truly global village. Because it is the most practical approach to obtain the needed information, internet usage is growing daily. People now depend heavily on the Internet in their daily lives. In this era of modern information technology, internet-based communication is the backbone of a nation for its economics and business, changing consumer behavior in a variety of ways. The banking industry has seen significant transformation recently.

Information technology has been heavily utilized in this context to keep up with the pace of the transformation. Physical banking will eventually become a thing of the past. Internet banking will soon take the role of traditional banking. Like other emerging nations, Bangladesh was affected by this change trend. Modern banking practices use electronic banking to provide consumers with both new and classic banking goods and services. Business parties or individuals can pay directly or debit accounts using electronic banking systems and telecommunications. It enables consumers to authorize payments, reconcile accounts, and access a number of other banking services while using a home computer that is networked to their bank.

Development of new online banking services, increase in household internet usage and creation of an effective legal and regulatory framework are needed to realize the benefits of internet banking in the development of a nation. The creation of service quality (SERVQUAL) characteristics to calculate the customer satisfaction has resulted from the development of electronic banking in general and internet banking in definite. One of the more well-known tools for calculating customer satisfaction is SERVQUAL, which was developed at 1988[1]. The comprehensive use of the SERVQUAL instrument since the growth in Internet use is due to the possibility that Internet-based home banking could fundamentally change how banks manage their relationships with their clients.

The banking and financial sector in Bangladesh has likewise embraced this development. The rapid increase of internet users and the need of the people to have access to their desired resources

when their desire show that Bangladeshi banks are becoming more and more cognizant of the significance of the internet. In today's brutally competitive sector, an increasing number of Bangladeshi banks are attempting to set themselves apart. This not only enables them to better connect their offers with changing client demands and technological advancements, but it also takes over some traditional banking duties, resulting in significant savings in branch-related costs. Finding out how customers feel about the general level of service quality and their satisfaction with the current online banking services becomes even more crucial as more Bangladeshi banks consider cutting-edge strategies, like online banking, to make their banking experience more convenient, effective, and efficient. In addition to assisting banks in developing effective strategies to employ efficient customer service as a differentiator in this very client-focused service sector, measuring customer satisfaction can give banks vital information regarding customer loyalty and retention.

1.2 Problem Statement

By providing certain extra perks like improved exchange rates or fee reductions, banks have made a strong effort in recent years to get more of their customers to adopt e-banking services. Despite these advantages, a sizable portion of customers are nevertheless torn between appreciating these advantages and worrying about the loss of a personal relationship with bank workers. By depending on this discussion, a crucial point remains unanswered: Can customer happiness be increased by providing the right degree of E-banking services? Can banks boost their customers' use of these services by increasing their confidence in them?

While using the online banking application, there were significant security issues. The cost of transactions is likewise considerable. Hackers utilize illegal methods to decrypt user data in order to gain access to account information such passwords and account numbers, which they then use to drain funds from users' accounts. A security issue is the main danger the customer faces. The appropriate skills for using online banking.

1.3 Aim of the Research

The main objective of the research is find out the level of customer satisfaction in different Key Factor of online banking. Those Key Factor are Security, User Friendly, Fund Transfer, Online Bill Pay, E-Statement, Reduce Transaction Cost, knowledge about system etc. My aim is to find

out the customer feedback in those key factor of online banking in Bangladesh. Recognize how Bangladeshi internet banks' customers behave. The additional aim is to suggest the findings for the development of the online banking services.

1.4 Research Methodology

It is a descriptive study built on data from a survey. The primary data source is the study's core foundation. To construct a broad concept for the survey in primary sources and the questionnaire used to gather information about customer satisfaction in Bangladeshi commercial banks' online banking systems. We gave 13 questionnaires to different banking clients. Data from 500 customers from the chosen sample of respondents from a Bangladeshi bank were gathered for analysis purposes. All questions responses have five options. All the data collected from three private banks in Bangladesh. Those banks are City bank, BRAC Bank, Dutch Bangla Bank. Matplotlib and VS Code software was used to process the acquired data with the aid of a computer. The data has been examined using the Python programming language.

1.5 Expected Outcome of the research

This research aims to determine the level of customer satisfaction in the context of an online banking system. The main conclusions are that there is just a rotation between "Highly Dissatisfied," "Dissatisfied," and "Neutral," "Satisfied," and "Highly Satisfied" in all consumer replies. This report reveals that of these five replies, over 50% of the responses fall into the satisfied category. This is a blatant sign of a happy consumer. Additionally, 20% - 25% of the respondents were Neutral, and 20% - 22% of them indicated that they were Highly Satisfied. 3% to 10% are dissatisfied and 1% to 2% are Highly Dissatisfied.

Suggestion

- Enhancing the security of online banking transactions is one recommendation that could enhance client online transaction.
- Many people use internet banking because of their better offerings.
- Simple online transactions are possible.

1.6 Conclusion

This study has covered the Background of the Research, Problem Statement, Aim of the Research, research methodology and propose solution. Additionally, the study gives a summary of the study by outlining each chapter of the research report. The chapters that follow examine additional relevant data and variables.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

In this chapter evaluates and analyzes customer satisfaction with online banking systems that are relevant to it. First off, the two primary subtopics of this chapter are theories and ideas of customer happiness and factors impacting customer satisfaction with online banking. The gaps in the literature have also been filled. Next, a chosen and suggested theoretical framework is established in order to effectively illustrate the provided ideas.

2.2 Review of Literature

Ramya, M., A STUDY ON CUSTOMERS SATISFACTION TOWARDS ONLINE BANKING TRANSACTIONAL SERVICE WITH SPECIAL REFERENCE TO COIMBATORE CITY. The Study of the Objective to Identify the Customers Satisfaction related to transactional Online Banking. The Study was analyzed with 120 Respondents. All the Data are collected from Coimbatore City. They simply use Simple Percentage Analysis and Ranking Analysis tools as a Statistical tool for Analyze the Data. The Study Analyze the Privacy and Safety of Online Banking Application. They said that Customers faced major Security issues while using Online Banking applications. The Hackers apply some Illegal Practice to Decrypt the Customer Personal Information. The Study suggests to improve the Safety of Online Banking Transaction to Increase the Customers Online Banking Transaction. Online Transaction may be made Simple. The main objective of the paper and my research aim is same which is find out the customer's satisfaction towards online banking. It was easy to think and write my research paper [2].

Amir, M.K. and Sheykh, D.H., 2017. Analysis of Customer Satisfaction on Online Banking: A Case Study on “One Bank Limited”. IOSR Journal of Business and Management (IOSR-JBM), pp.36-42. The Objective of the study is to determine the customer Satisfaction level of online banking services with one bank Limited in Bangladesh. They Collected response from 50 Customers and Five Different Branches of One Bank Limited in Dhaka City. The responses were gathered from Businessman, Students, Service Holders, Lawyer and Teachers etc. Most of the

Respondents are Educated. The Only Limitation of the report is respondent's unwillingness. People feel hesitant to give their information because they are concerned about their safety. They have some supporting objective of the Study.

1. Regarding online banking services, understanding the thought of customer happiness is essential.
2. Understanding the numerous online banking services offered by Bangladesh's private commercial bank.
3. Understanding the benefits and drawbacks of online banking in Bangladesh.

The report assesses the customer's level of satisfaction in four angles. Security, Usability, Update Frequency, and overall online banking system. They Analysis the Customers Satisfaction based on Age and Profession. The most significant findings is that all consumer replies revolve around only three options: Neutral, Agree, and Strongly Agree. This Paper suggest almost 60% responses are Agree and Strongly Agree and rest of 40% are Neutral Feedback. This is Clear Indication that most of the Customers are satisfied in Online Banking of "One Bank Limited". One bank is one of the private bank of Bangladesh. After reading this paper I got a clear understanding that what facilities provide to their customer towards online banking and what's findings need to improve [3].

Ling, G.M., Fern, Y.S., Boon, L.K. and Huat, T.S., 2016. Understanding customer satisfaction of internet banking: A case study in Malacca. *Procedia Economics and Finance*, 37, pp.80-85. Finding and examining the factors that influence customer satisfaction with Internet banking is the aim of this study. The five factors that can affect customer satisfaction with Internet banking are service quality, online design and content, security and privacy, convenience, and speed. They use questionnaire for survey and they collected response from 200 user of Internet banking from different branches and different occupation. In this research shows that Customers Satisfied with design and content, convenience and speed. Customers supported those three Elements. In order to boost client happiness, internet banking services should focus more on these three factors. But Customers don't support service quality variable and security and privacy. Online banking providers cannot take care of the significance of those two elements, as previous studies have revealed that they are crucial in ensuring client happiness with online banking. This

study may assist Online banking suppliers in learning about their clients' opinions and identifying solutions from their perspective. It can make it easier for online banking services to meet their customer needs. In this paper I got an idea that all the attributes of Online Banking are not supported by the Customer. If any of have weakness, Banks need to improve this very quickly. Otherwise they lost their customers [4].

Siddika, A. and Sarker, B., 2019. Customers' satisfaction with internet banking: Evidence from Bangladesh. This study that looked into the relationship between customer satisfactions with Agrani Bank Limited's various internet banking services. To investigate the correlation between user satisfaction and Agrani Bank's , various internet banking services, a set of five independent variables – customer income (IC), account maintenance (MA), ATM card use (ATM), purchasing any product over the internet in the previous 12 months (PP), and frequent bank visits (FV) – was used. The causal relationships between the variables are also investigated using the ANOVA and coefficients techniques. The Analysis shows that the majority of respondent's use internet banking to withdraw money (52 %), pay bills (20 %), transfer funds between accounts (12 %), and manage payroll (16 %). The Analysis also shows that although 76 % of respondents believe that internet banking is safer than any other banking system, a small number of respondents disagree. Some don't fully comprehend internet banking, while others are concerned that their accounts have been hijacked. In addition, 50% of respondents are satisfied with internet banking, 20% are extremely satisfied, 16% are neutral, and 14% are completely dissatisfied [5].

Renu, D.P. and Singh, K., 2019. The Impact of E-Banking on the use of Banking Services and Customers Satisfaction. International Journal of Trend in Scientific Research and Development, 3(4), pp.20-23. Since technology revolution, every task in the banking sector is automated, from account opening to money transfers through e-banking, eliminating the need for customers to visit banks and wait in long lines. This makes work for both customers and banking institutions simple, effective, and quick. Unfortunately, a limited percentage of customers do not utilize this e-banking due to ignorance and lack of education (since using technology requires knowledge). Some public sector banks have staff members who are over 50 and have very little experience with computerized banking or online banking. And these are the costs that the public

sector banks must bear in order to train their employees to use computers while they are working in the bank to handle any transaction. Otherwise, technology has been playing vital to the banking industry. Better business operations are made possible by e-banking. It offers a fantastic opportunity. E-banking is useful for banks as well as customers, in addition to both [6].

Ali Karam, A. and Sleimi, M., 2018. The Impact of E-Banking Services Quality on Customers Satisfaction Moderated by Customer Trust: Survey on Arab Bank in Amman, Jordan. This study's goal is to "explore the moderating influence of customers' trust on banking service quality effects over customer happiness." In order to gather at least the required number of respondents, 500 questionnaires were randomly delivered to online-banking users in all Amman City branches of Arab Bank. SPSS software was used for the analysis of 300 questionnaires. First they analyze the data according to the demographic information. According to the gender results, males made up 64% of the population while females made up 34%. Additionally, a category rate is included in the income variable that ranges 200 JOD to more than 800, however the results of the descriptive investigation reveal that the majority of respondents chose the range 601–800, with 40% as the highest rate. In terms of experience, the group with the largest percentage (43.3%) was those with 4 to 7 years of experience. However, with 57.3 percent of the total, the participants were mostly between the ages of 18 and 30. Finally, 85 percent of respondents had bachelor's degrees in terms of education. The usage of multiple linear regressions was examine the effects of independent variable "E-banking Services Quality" on the dependent variable "customer satisfaction" in order to analyze the objectives of the current study. Five characteristics of the independent variable assurance, empathy, reliability, tangibles, and responsiveness are controlled by customer faith. According to ($R^2=.878$), it can be concluded that customer or visitor satisfaction levels in Arab Bank were quite high. According to research, there is a strong connection between consumer happiness and online-banking services. According to the findings, customers at Arab banks are happy with assurance, empathy, dependability, tangibles, and response. In order to maximize bank potential for customer satisfaction, Arab banks' top executives should emphasize responsiveness element and pay attention to the motivation and behavior of their workforce. For workers to operate effectively and efficiently, these outcomes might be reasonable [7].

CHERUKUR, M.R.B. and RUBY, M.S., 2020. Study on electronic banking towards customer satisfaction. Journal of Contemporary Issues in Business and Government| Vol, 26(2), p.938. The goal of the study is to comprehend client satisfaction with online banking. Electronic banking was created primarily to make it easier for customers to transact money at anytime, anywhere, without having to go to the bank. To determine customer satisfaction, a survey of customers of electronic banks is used in the study. The research was analyzed using a sample of 205 people. They analyze the data according to the different demographic information. Male respondents are 48.3% and Female respondents are 51.7%. The majority of respondents (35.6%) are in the 18 to 25 age range, followed by those in the 26 to 35 age range (27.8%), those in the 36 to 45 age range (20.5%), and those in the 46 and older age range (16.1 %). Following to the Educational Qualification the bulk of respondents (45.4%) are postgraduates, followed by undergraduates (32.2%), education (13.2%), and doctoral degrees (14.8%). (9.3 %). Moreover according to the marital status Married respondents are rare in comparison to unmarried respondents, making up the majority of respondents (54.6 %) (45.4 %). As specified by Annual Income Less than 2.5 lakhs make up the bulk of responses (31.7%), followed by 2.5–5 lakhs (30.2%), 5–10 lakhs (26.3%), and respondents from more than 10 lakhs (11.7 %). Finally to agreement with occupation, the majority of respondents (29.8%) identify as workers, followed by business (23.9%), professionals (24.4%), and others (16.1%). And homemakers (after whom the percentage is descending) (5.9 %). They were doing Mean analysis based on 13 questionnaires and the analysis clearly shows that the aspects that impact are determined by the mean values of variables such as use, significance, time savings, accessibility, rating, educational role, security threats, effectiveness, workplace use, security, costs, issue handling, and convenience. Therefore, it is clear from the data that the use and significance of electronic banking are the criteria that have the biggest impact on consumer satisfaction [8].

Shompa, F. and Islam, Z., 2015. Customer Satisfaction of Online Banking Services: A Case Study On Islamic Banks In Bangladesh. Bangladesh Research Journal, 15. The goal of the research is to examine, using a modified SERVQUAL model, how consumers of Islamic banks in Dhaka, Bangladesh evaluate the quality of their services. This paper attempted to determine the degree of client happiness. Over 150 randomly chosen respondents are surveyed in order to

accomplish this. Simple statistical techniques were employed to evaluate the data, including determining the mean value, standard deviation, and data regression analysis. Tools like the Statistical Package for the Social Science (SPSS), MS Word, and MS Excel are utilized to represent and analyze those data. The information showed that online banking services are significantly and directly impacted by the quality of customer care. How much the provided services are for the customers was investigated in the study.

The following are the specific goals:

- To become familiar with the banking industry, particularly Islamic banking services, in Dhaka, Bangladesh.
- To measure consumer satisfaction with the level of service provided by various Islamic banks in Bangladesh.
- To ascertain the level of service provided by the relevant organization.
- If any recommendations are required, to make them based on the analytical findings of the current study.

The research's conceptual framework are Reliability, Tangible, Online Services, Responsiveness, Assurance, and Empathy. The questionnaire consists of 27 questions. Nine of them are demographic questions, the other 18 were made on a five-point Likert scale to gauge customer satisfaction. In total, Bangladesh has 9 Islamic banks. Five Islamic banks, comprising around 56% of the population organization, were chosen as a sample from these studies. Due to time restrictions, the analysis is preliminary and only includes 30 clients from each organization who are from various Islamic bank branches. Only the city of Dhaka is included in the study region.

According to the report, the age group of 16 to 30 year olds had the largest percentage of users at 62%. 39 respondents or 26% of the total were in the age range of 31 and 45; 15 respondents or 10% of the total were in the age range of 46 and 60; and 3 respondents or 2% of the total were in the age range of 61 and 75. Most users of online services are between the ages of 16 and 30. Out of 150 responses, 72 (48%) are women and 78 (52%) are men (58 percent). The majority of the clients are men (58 percent). 56 percent of the clients are married, while 32 percent are single, 6 percent are widowed, and 6 percent are separated. Out of 150 responses, (64%) finished their undergraduate degree, while (26%) finished the HSC level. 180 responders (72%) are Muslims,

30 (20%) are Hindus, 9 (6%) are Christians, and 3 (3%) are Buddhists, according to my research (2 percent). Account Type and Duration of Time Spent with Islamic Banks by Respondents the majority of clients have savings accounts. A current account is held by 36 respondents, or 24% of customers; a fixed account is held by 30 respondents, or 20% of consumers; and another account is held by 12 respondents, or 8% of customers. The majority of online service user respondents had been using Islamic banks for 5 to 10 years, and 63 percent had been doing so for 1 to 4 years. Customers care more about value than they do about the price they are paying. This study demonstrates that the majority of clients are satisfied.

56.88 percent is the weighted mean value for all elements of satisfaction, which corresponds to line in value = 4. Users of internet services are not entirely satisfied, thus this signifies. In light of this, it may be claimed that Islamic banks are not providing satisfactory online banking services. However, there are some tactics that can be used to leave customers extremely satisfied [9].

Al Kabir, A. and Poddar, S.C., 2015. E-Banking and Customer satisfaction in Bangladesh. European Journal of Business and Management, 7(8), pp.48-54. This paper clarifies Bangladesh's experience with electronic banking. Examining customer satisfaction with service quality and determining if the institutions' e-banking services are satisfactory to Bangladeshi clients are the study's key goals. Four of the six criteria that have been found to increase customer satisfaction are deemed to have an effective influence. They made questionaries' for their research. Which are

- I. What are the main customer satisfying factors affecting e-banking service quality?
- II. How customers are satisfied in general?

The study's main objective is to gauge Bangladeshi consumers' level of e-banking satisfaction. These additional key goals are listed below:

- To provide information about Bangladesh's electronic banking system.
- To research the significance of and effects of service excellence and customer happiness in electronic banking.
- To determine the key service quality factors in E-banking that have the greatest impact on customer satisfaction.

The both primary and secondary sources data are the basic foundation of the study. To establish a general framework for the survey in primary sources and the questionnaire used to gather information regarding customer satisfaction with commercial banks in Bangladesh's e-banking. The study makes an effort to concentrate on 26 qualitative traits. Since the study's total population was unknown, a sample size of 400 was used. Customers were chosen at random during the sample process. The respondents received 400 questionnaires in all. The final sample size in a usable form was 382. Several questions on the online service and respondents' expectations were posed to the various respondents after an analysis of the online banking services in Bangladesh's convenient commercial banks. According to these descriptive statistics, the mean score on a Likert scale for customer satisfaction with e-banking is 3.81, which is above the satisfactory standard. The table also identifies the key elements that E-Banking consumers find most satisfying. Customers are generally satisfied with Reliability, Ease, Charges, Assurance, and Responsiveness, according to the mean values. This pleasure stems from speedy services, ease of money deposits and withdrawals, server and ATM booth malfunctions, contentment with equipment, physical facilities, attractive materials, etc. Customers are less satisfied with service fees, fees for using another bank's ATM, and other fees. Nevertheless, a regression analysis will be conducted to identify those means that are above the neutral level of satisfaction and to explain the factors influencing the level of satisfaction in Bangladeshi e-banking [1].

The following list of limitations applicable to this research:

- Many survey participants know only a little about Bangladesh's e-banking services.
- They don't have enough time to answer the questionnaires.
- Only Bangladesh's Dhaka city has been considered.
- The clients can be biased.

Baskar, S. and Ramesh, M., 2010. Linkage between online banking service quality and customers. Perspectives of Innovations, Economics, and Business, 6(1231-2016-100709), pp.45-51. The studies show that the effectiveness of the online information system, the online customer service, and the product quality of the financial service have a significant and positive impact on customer satisfaction. According to the suggested research paradigm, the current study concentrates on the following goals: (i) To determine the main online banking service quality parameters, (ii) to assess how customers view the elements of service quality and (iii) to assess the

relationship between customers' perceptions of the factors that affect service quality and their level of satisfaction.. The amount to which the level of service actually provided meets customer expectations is known as service quality. Customer satisfaction is the result of how consumers perceive, assess, and react psychologically to their interactions with products and services. Prior to making a purchase, consumers have preconceived notions about a particular good or service, and their perceptions of quality are influenced by their satisfaction. 400 individual questionnaires were mailed to a systematic random sample of clients of large commercial banks with online banking capabilities in order to gather the data for the study. A method of systematic sampling was used in this study. Using this technique, 400 people from 42 banks were chosen. These clients were identified as having used online banking at the time of the survey, and they were informed that the questions related to their experiences with online banking. In just two months, only 23% of the critics responded favorably. The data from other clients was gathered over the course of an additional two months. With more effort, the second attempt had a response rate of 36.00% out of a total of 400 responders. The sample size was 236 (92+144) clients in total. A total of 30 criteria were utilized to gauge the various aspects of the quality of the online banking service. Finally, five items were used to gauge client happiness. Five-point scales ranging from "5 = highly satisfied" to "1 = highly dissatisfied" and "5 = strongly agree" to "1 = strongly disagree" were used to elicit responses to the questionnaire items. The necessary statistical methods, such as exploratory factor analysis, the goals of the study were achieved using multiple regression analysis, correlation analysis, and confirming factor analysis. The three different aspects of the quality of the online banking services all significantly increase consumer satisfaction. Customers' satisfaction changes can be attributed to the following three aspects of online banking service quality to the level of 76.82 percent. The investigation shows how important client satisfaction is in determining the quality of online customer support [10].

Unyathanakorn, K. and Rompho, N., 2014. Factors affecting customer satisfaction in online banking service. Journal of Marketing Development and Competitiveness, 8(2), p.50. This study focuses on variables that affect customers' satisfaction with using the online banking services of commercial banks. The American Customer Satisfaction Index Model and the Thailand Customer Satisfaction Index Model are both used to measure customer satisfaction. The results

can be applied as guidance to raise the level of the online banking system quality. This analysis was based on a survey done by the Thailand Productivity Institute. The Institute used a survey that was originally created in the United States, with some adjustments made to match the situation in Thailand and some new questions added to support further study. Direct user interviews were conducted as part of the survey at the customer service desks of six reputable banking organizations. But in this study, the survey was carried out using both an online survey and an interview. According to the general rules, the responder had to have utilized the services in issue within the previous three months, be between the ages of 18 and 59, and not work for a financial institution, marketing research, or advertising agency. The age selection was done to enable the survey to reflect Thailand's demographic structure as of 2011 using population statistics from the Thailand National Statistics Office (Thailand National Statistics Office, 2012). Questions from TCSI, which was founded on the ACSI paradigm initially, have been modified for this study. Customer satisfaction is measured using a ten-level Likert scale, with 1 being the least probable and 10 being the most likely (10). Customer complaints is an exception, when a ratio scale is applied. The inquiries were modified to be suitable to this survey using questions from the Thailand Productivity Institute's TCSI model. Descriptive statistics were employed to describe the demographic features of the sample following data collection. The model was further using the Structural Equation Model for testing (SEM) approach. The ACSI and TCSI models both previously used this methodology.

Only 305 responses from 310 returned questionnaires could be used in the analysis. 48.06 percent of respondents were men, 14.84 percent were single, 32.51 percent were married, and 0.71 percent were divorced. 51.94 % of the population were female, and of those, 39.22 % were single, whereas 21.37 % were married and divorced were 0.35 %.

In terms of age, 39.99 percent of respondents who used internet banking were between the ages of 30 and 39 (18 to 59), with 29.17 percent falling between the ages of 25 and 29.

Regarding educational attainment, the majority of respondents (568.2%) held a bachelor's degree, while 39.99% held a master's degree. According to employment, 13.64 percent of workers were employed by the government or state-owned enterprises, 18.94 percent were business owners, and 43.94 percent worked for private companies.

Additionally, it was discovered that 14.02 percent of respondents had an income of less than 15,000 Thai Baht, 24.62 percent had an income of between 15,000 and 25,000 Thai Baht, and 40.15 percent had an income of over 45,000 Thai Baht.

The surveys also revealed that Siam Commercial Bank (31.32 percent), Kasikorn Thai Bank (30.60 percent), and Bangkok Bank were the top three banks that respondents had used the most frequently over the previous three months (17.44 percent).

There were 140 official complaints, of which it was discovered that 52.86 percent had not filed a grievance through the official complaint process. Employees at bank offices (12.12 percent), bank call centers (19.53 percent), and email were the top three methods utilized to file official complaints (7.41 percent).

52.86 percent respondents don't put any official complaints, leading to 271 unofficial complaints. 16.61 percent of the respondents complained to bank staff at local branches, while 8.49 percent complained online.

The characteristics of online banking services were ranked by the respondents from those from those they utilized most to those they utilized the least. The bulk of users (51.60%) checked their accounts online, followed by users who moved money within their bank (33.45%) and users who paid bills (28.11%) [11].

Alsudairi, M.A., 2012. E-service quality strategy: Achieving customer satisfaction in online banking. Journal of Theoretical and Applied Information Technology, 38(1), pp.6-24. This research study's goal is to develop a system for measuring customer satisfaction while e-service quality is related to online service quality. This necessitates developing a plan for creating a web-based e-service quality model for internet banking services. In order to design and measure a new e-service model that is applicable to assess the quality of web-based internet banking service, this article will present a literature study of several models linked to online banking for customer satisfaction. Oliver's model has been modified in Spreng and Mackoy's (1996) model of perceived quality and pleasure (1993). According to Seth and Deshmukh (2005), this model emphasizes the impact of expectations, perceived performance, wishes, desired congruency, and expectations disconfirmation on total service quality and client satisfaction [12].

Expectations: For the goal of evaluating the quality of portal-based internet banking service, a set of dimensions are hypothesized and proposed in relation to study literature findings.

Perceived Performance: These are the findings from the examination of customer perceptual information gathered in accordance with the designed questionnaire's anticipated set of dimensions.

Desired: Based on frequency and ranking analyses, this group of most preferred aspects was identified from customer perspectives.

Expectations Disconfirmations: The results of the data analysis show the lack of conformity with the suggested dimensions when they are assessed while taking customer data into consideration.

Intended Congruency: This is the assessment of how closely the outcomes of the data analysis reflect the degree to which the performance of the dimensions of perceived service quality are in agreement with the prior values of the desired confirmations for the desired set of dimensions. Therefore, achieving the desired congruency serves as a prerequisite approach that verifies the level of overall service quality and, as a result, can lead to total customer satisfaction.

Overall Service Quality: Service quality dimensions that have been independently verified and are derived from intended congruency make up overall service quality.

Overall Customer Satisfaction: The increased value of each of the overall service quality aspects leads to an increase in overall customer satisfaction.

Naveed, R.T., Irfan, M., Aslam, H.D., Anwar, B. and Ayub, A., 2019. The Effect Of General Banking Information Technology System On Customers' satisfaction With The Moderating Effect Of Customer Trust: An Empirical Study From Pakistani Commercial (Islamic) Banks. The main goal of this study is to examine how customers perceive using online banking technology and how much confidence they have in it. A questionnaire with a five-point Likert scale was used to gather primary data, and the intended respondents were customers of several commercial banks. A total of 300 people, including clients and staff from various commercial banks, were questioned. Different bank personnel simply stated that they did not have enough time to fill it out entirely when collecting data. However, the majority of workers give them enough

time and attention to react. Major metropolitan banks in Pakistan were the primary distribution points for questionnaires. Only 300 of the questionnaires were delivered to the 350 customers and workers of the several main bank offices. Additionally created on a Google Form, the questionnaire was distributed to bank personnel. Data collection using the convenient sampling technique. MCB Bank, UBL, ABL, HBL, NBP, Dubai Islamic Bank, and Mehran Bank serve the majority of their clients. The only data source for this study is cross-sectional data.

The more trustworthy and often used instruments that have been used for measuring the variables allow for greater inter-consistency and the ability to prioritize the instruments. An instrument's dependability demonstrates both its future utility and the internal consistency of the measurements. According to DeVellis (2016), a reliability rating of an instrument that is less than 0.7 is acceptable, while one that is 0.7 or more is preferred. Additionally, the instruments that were utilized for the measurement had an overall value greater than .70, which denotes that they are very reliable. The majority of respondents—51 percent of them are female—are either customers or employees of different commercial banks, whereas just 49 percent of the respondents who identified as men answered the survey. The majority of them have degrees from bachelor's and master's programs, totaling 144 out of a possible 300. The survey is made stronger by the fact that the respondents are educated and fall within the majority of their age brackets. The respondents are primarily logical people who have used financial technology for a long time and are well-versed in the banking industry. Due to the use of the transaction processing system, the relationship between the customer satisfaction and the moderation of consumer trust is likewise trending downward ($P=0.001, = -.020$). The incorrect bank transactions may be the main factor in the deteriorating TPS-CT customer satisfaction interaction term. Bank systems can occasionally be compromised by hackers [13].

The results of multiple regression analysis show a correlation between customer happiness and general banking technology. However, the findings of this latest study show that the internet banking system undermines customer trust.

Sadozai, A.M., Saleem, A., Chuanmin, S., Ali, M.R. and Marri, M.Y.K., 2017. Factors affecting customers' satisfaction in online banking: empirical evidence from developing countries. International Journal of Advanced Biotechnology and Research, 8(2), pp.96-104.

The given study specifically highlights the effect of e-banking on customer satisfaction. From review the Literature Review they found some a crucial element influencing customers' happiness with online banking in underdeveloped nations. For the purpose of analyzing how customers respond to service quality, reliability, credibility of a system, transaction efficiency, ease of use, and customer awareness of the availability of electronic banking, we gathered data from 250 customers of various banks in Pakistan. We also looked at how satisfied customers were with using electronic banking. The following hypotheses can be made about this study based on the literature review:

H1: Customer satisfaction will rise with online banking reliability.

H2: Customer satisfaction will rise as online banking transactions become more efficient.

H3: Customer satisfaction will rise as a result of customer support in online banking.

H4: Customer satisfaction will rise with the ease of use of internet banking.

H5: Online banking service security will boost customer satisfaction.

H6: If the bank promotes online banking, customer satisfaction will rise.

We gather the data in Pakistan. 400 questionnaires were given out to various banks customers. 250 of these responders give comprehensive information. Before gathering the data, the study's goal was briefly described. Due to time and money constraints, we adopted the convenience sampling strategy to get the data. The various study variables were measured using a scale that has already been published. The scale created by Nochi and Nochi (2013) is used to measure Customer Support, Ease of Use (User Friendly), Reliability, Transaction Effectiveness, and Service Security. A five-point Likert scale with the values strongly disagree (1) to strongly agree (5) was used to measure the study's variable (5). Male respondents made up 55.6% of the total sample. The majority of the responders were between the ages of 20 and 30. Most individuals were married (75.6 percent). Almost all of the respondents hold bachelor's degrees (150). The majority of folks

earn less than 20,000 Pakistani rupees every month. Most survey participants only conduct one electronic transaction per month (32.85).

The average results showed that most respondents agreed with the study's measuring statements, such as 3.03 for customer satisfaction. The reliability analysis verified that the variables in this study meet Nunnally's (1978) recommended minimum threshold of 0.70. The reliability of the studied variable has a value between 0.72 and 0.83. It also demonstrated that the factors under study are reliable [14].

This study has a number of drawbacks despite all the significant contributions. The information was only gathered from one nation. Future research would be driven in other nations while taking the variables from this study into consideration. It is also advised that probability sampling be used in future studies, and that data be gathered more than once. The fact that we obtained data from the participants is another crucial study restriction. Because businesses account for a large portion of bank deposits, data from corporate clients should be included in future studies.

Ankit, S., 2011. Factors influencing online banking customer satisfaction and their importance in improving overall retention levels: An Indian banking perspective. In Information and knowledge management (Vol. 1, No. 1, pp. 45-54). The main objective of this empirical research study is to identify the key variables that significantly affect satisfaction of online banking consumer with the overall level of service quality provided by their banks. The effectiveness of these criteria in the context of online (Internet) banking is also evaluated by this study. The data are collected from Vadodara (Baroda) city which is the third most populated city in Gujarat. For this research study, a total of 250 Vadodara residents participated in a survey. Tools Used: Questionnaire & Interview. All Vadodara clients who use, want to use, or have already adopted Internet banking as an option.

Questionnaire are divided into two parts. The researcher self-administered the questionnaire. Part 1 of the study consists of questions about the demographic characteristics of the respondents, including their age, gender, and marital status, level of education, occupation, and industry of work, title, and monthly income. There were questions in Part 2 (Consumer Opinion) about the key aspects of online customer happiness. All 41 of the questionnaire's second-part items

employed a Likert scale, with 1 denoting "very dissatisfied" and 5 denoting "very satisfied." Research papers, journals, websites, books, project reports, and other materials were used to gather secondary data.

Most users were between the ages of 26 and 35. (50%). The chart also shows that 22.4 percent of respondents were under 25 years old, 23.6 percent were in that age range of 36 and 45, and 4 percent were over the age of 45.

Additionally, it can be noticed that there were roughly equal numbers of males (52.4%) and females among the respondents (47.6 %). The ratio of males to girls listed above is consistent with India's current population, hence it can be said to reflect the country's demographic balance.

In addition, the majority of respondents (56.4%) were single, compared to 40.8% of married respondents. Graduates (64.8 percent) and post-graduates made up the majority of the respondents (28.8 %). This suggests that the respondents were highly literate. Regarding employment status, the respondents included a variety of workers such as professionals (42.4 %), self-employed (4.8 percent), wage workers (28.4 percent), and students (20.8%). (3.6 %). It is clear that a large percentage of respondents were employed. In the study, the majority of respondents (69.6 %) earned between Rs. 10,000 and Rs. 20,000, while 23.2% and 7.2%, respectively, and had incomes below Rs. 10,000 and beyond Rs. 20,000.

Approximately 60% of respondents said they were satisfied or very satisfied with internet banking. 34 respondents, or 13.54 percent of those who responded to this section overall, said they were extremely satisfied with the bank. About 116 respondents, or 46.48 percent, indicated that they were largely happy with the bank. On the other hand, it is also evident that 30.26% of the respondents expressed a lack of contentment. When this percentage of dissatisfied consumers is applied to the overall number of bank clients, it becomes quite a significant amount and a source of worry for the banks. In conclusion, the data indicates that the majority of respondents have a positive outlook and are pleased with the banks' online services [15].

Sakhaei, S.F., Afshari, A. and Esmaili, E., 2014. The impact of service quality on customer satisfaction in Internet banking. Journal of mathematics and computer science, 9(1), pp.33-40. This paper describes a study that looks into Internet banking service quality indices. The goal

of this study is to comprehend how Iranian Internet banking service quality elements affect client happiness. In order to investigate the relationship between service quality and customer happiness, a hybrid model built on earlier research has first been put out. Based on the literature analysis, six service quality dimensions are reliability, responsiveness, efficiency, fulfillment, security/privacy, and website design have been defined. This study looked at how consumer satisfaction with Internet banking is affected by service quality. The goal of this study is to understand how service quality elements affect consumer satisfaction with online banking. Below are some research questions that the study will attempt to address:

- (i) What is the customer-satisfying aspects of service quality in e-banking?
- (ii) What factors in e-banking affect customer satisfaction in terms of service quality?
- (iii) How much does each e-banking service requirement affect consumer satisfaction?

Six service quality dimensions are Reliability, Responsiveness, Efficiency, Fulfillment, Privacy/Security, and Website Design were established in this paradigm. The influence of the website design component on customer satisfaction in online banking was included and studied.

The suggested study contains the following hypotheses: (i) In Internet banking, reliability and service quality are related. (ii) Efficiency and service quality in online banking are related. (iii) In Internet banking, responsiveness and service quality are related. (iv) In Internet banking, there is a connection between fulfillment and service quality. (v) In Internet banking, there is a correlation between privacy and security and service quality. (vi) Website design and the level of service provided by Internet banking are related. (vii) In Internet banking, there is a connection between service quality and consumer pleasure. (viii) Customer satisfaction in Internet Banking and utilization of various banks' websites varied significantly.

The information was gathered from Tehran, Iran, customers who used online banking services between the months of April and July 2013. A Likert-based survey was used, with a scale of 1 for strongly disagreeing and 5 for strongly agreeing. The population in this study is sizable and covers a wide geographic area. The Morgan Table states that a sample size of 384 people was used. Through the use of random sampling, the customers were chosen. To comply with Morgan's table, which assumes an infinite population size in this study, a sample size of 384 has been used. Through the use of the Cronbach's alpha test and SPSS18, the reliability of the constructs was

evaluated. For the questionnaire survey, Cronbach's alpha values were estimated at 0.8. Since Alpha 0.7, the questionnaire's reliability is deemed satisfactory.

The output of Software for the variables of Reliability, fulfillment, Efficiency, Privacy / Security, Responsibility, and website design are 4.05, 3.75, 3.68, 3.48, 3.11, and 2.94. Six dimensions—reliability, effectiveness, responsiveness, fulfillment, security/privacy, and website design—were analyzed at the conclusion of the study to establish their relative value in boosting customer satisfaction with online banking. It employed the Freedman test. The study demonstrates a significant association between customer satisfaction in Internet banking and the Six Service Quality Dimensions. Reliability has the biggest impact on client satisfaction, whereas website design has less of an impact [16].

Firdous, S. and Farooqi, R., 2017. Impact of internet banking service quality on customer satisfaction. The Journal of Internet Banking and Commerce, 22(1), pp.1-17. The goal of the study is to provide banks and decision-makers with greater knowledge of the components of internet banking and how they affect customer satisfaction. Particularly given that little research has been conducted in this area in India, which has emerged as the center of e-banking development as a result of the current government's recent demonetization, which allowed individuals to go cashless and grow the digital economy. The additional objective of the study is (i) to determine the numerous aspects of the quality of the internet banking service. (ii) to investigate the connection between customer happiness and the various aspects of the quality of the internet banking service. (iii) to research how customer happiness is impacted by the characteristics of the quality of the internet banking service. The E-S Qual and E-RecS-Qual model created by Parasuraman was utilized in this study. The study's structured questionnaire, which contained the E-S Qual and E-RecS-Qual dimensions, was adopted for use in the research. There were four sections in the questionnaire.

- Customer demographics: This section's inquiries centered on the customer's gender, age, and level of education.
- E-S-QUAL scale: with a 5-point scale (1=strongly disagree, 5=strongly agree), respondents in this part evaluated the Web site's performance on each scale item.

- E-RecS-QUAL scale: In this section, respondents assessed the Web site's performance on each scale item using a 5-point rating (1=strongly disagree, 5=strongly agree).
- Customer satisfaction: With a 5-point scale, respondents were asked to express how satisfied they were with the quality of the banks' electronic services in this part. 1 is extremely opposed, and 5 is strongly agreed. The following set of hypotheses were formed based on the aforementioned goals:

H1: Efficiency and Customer Satisfaction Have a Significantly Positive Relationship

H2: Customer satisfaction is significantly positively correlated with system availability.

H3: Customer satisfaction and fulfillment are significantly positively correlated.

H4: There is a strong correlation between consumer satisfaction and privacy.

H5: Responsiveness and have a strong favorable relationship. Customer Contentment

H6: Significantly positive associations exist between website design and. Customer Contentment

H7: Customer satisfaction and contact have a strong positive relationship.

People who live in New Delhi and have used the SBI and Indian bank's Internet Banking systems for at least a year made up the survey's sample population. This made sure that each respondent had enough knowledge of online banking. Out of the 200 persons who were asked to participate in the survey, 194 valid questionnaires made up the final sample (valid).

Analysis of the correlation matrix reveals an estimated 0.706 link between effectiveness and customer satisfaction. This figure shows that the correlation between the variables is 70%, which is very significant and positive. This is the factor that has the strongest correlation to customer happiness.

System availability describes the website's proper technical operation. The value of the Customer satisfaction and system availability have a 0.628 association, according to an analysis of the correlation matrix. Hypothesis 2 is shows that there is a significant positive relationship between system availability and customer satisfaction is supported by the results, which demonstrate a 99 percent confidence level in the existence of a favorable association between the two.

The degree to which the site's guarantees about Delivery of orders and item availability are maintained. According to analysis, the correlation value is 0.649, indicating a significant and positive association between fulfillment and customer happiness. At a significance level of 0.01, this is consistent with theory 3.

Responding to customers' needs, managing their concerns, addressing complaints, etc., is referred to as responsiveness. Customer service representative services are appealing and beneficial in resolving client issues. According to analysis, the correlation value is 0.663, meaning that there is a significant positive association between customer satisfaction and responsiveness and that as responsiveness increases, so does customer contentment. The link between the two dimensions is significant at 0.01, supporting hypothesis 5.

Support is accessible over the phone or online representatives. According to the data above, this factor has the strongest association with customer happiness. The value of correlation between the two is 0.541.

The website design and client happiness in internet banking are significantly and substantially positively correlated, according to the correlation matrix. The correlation between website design and customer happiness is 0.704, which is significant at 0.01, supporting hypothesis 7.

The R square value of 0.715 indicates that 71 percent of the alternative in customer happiness can be related to the degree of the banks' e-service quality, while the remaining 29.5 percent of satisfaction is caused by factors other than the banks' e-service quality. Therefore, it is evident from the statistics above that consumer satisfaction with internet banking in New Delhi is influenced by the quality of the service provided [17].

Islam, R., Ahmed, S., Rahman, M. and Al Asheq, A., 2020. Determinants of service quality and its effect on customer satisfaction and loyalty: an empirical study of private banking sector. The TQM Journal. The main goal of this study is to examine how several service quality factors, such as dependability, responsiveness, visibility, employee dedication, and accessibility to service, affect customer satisfaction in Bangladesh's private banking industry. Additionally, the study explores the link between customer happiness and loyalty as well as the impact of demographic factors on customer satisfaction. 200 usable responses—representing a 62.5 percent valid response rate—from 320 self-administered survey questionnaires issued to Bangladeshi customers of private banks were received by the researchers. They use total five hypothesis to ensure the Customers Satisfaction and one hypothesis to ensure Customer Loyalty. Those hypotheses are Reliability, Responsiveness, Visibility, Employees Commitment, Access to Service, Customer Loyalty.

Testing the measurement model is necessary before using the structural equation model (SEM) in order to determine whether the latent variables are adequate. The measurement model also assessed the validity and internal coherence of the study's variables. SEM was utilized in the current study to examine the correlations between independent and dependent variables. In order to determine the correlations between customer happiness, private banking service quality parameters (i.e., reliability, responsiveness, visibility, employee commitment, and access to service), and customer loyalty in Bangladesh, this study tested a structural model with six hypotheses. The model and the data were reasonably well-matched: Chi square per degree of freedom (9.584/4): 5 2.396, less than 5, NFI: 5 0.989, CFI: 5 0.993, over 0.9, p: 5 0.048, nearly 0.05; RMSEA: 5 0.084, less than 0.088; and PNFI: 5 9.16, higher than 0.9.

Along with the aforementioned SEM analysis, other tests like the analysis of variance (ANOVA) and logistic regression (LR) have also been carried out. Since customer satisfaction is the main factor in acquiring a client's loyalty and serves as a platform for an organization's survival, it has been selected as the dependent variable. The results support the findings of the ANOVA analysis. There is only one occupation that significantly correlates with customer satisfaction (Wald (2) 5 11.897, p 5 0.003). The complete LR equation reads as follows:

Gender, logit (customer satisfaction), 5 21.214-0.951 (male) Age (21–30 years) = 0.139 Age (31–40 years) = 1.027 - 0.008 education (bachelor's), 1.826 profession (businessman), 2.082*

profession (students), 1.175 customer type (depositor), 20.704 years of experience (less than 5 years), and 19.195 years of experience (between 5 and 10 years) [18].

The research's conclusions show that while reliability and service accessibility are found to have little effect on consumer satisfaction with private banking services, visibility, responsiveness, and personnel dedication have positive and significant effects. The results of this study also showed a strong and positive association between customer loyalty and customer satisfaction. However, all other demographic factors, with the exception of respondents' occupation type, do not statistically significantly relate to customer satisfaction. The study was limited to Bangladesh's private banking industry, thus other service industries may not be able to use the findings.

Jahan, N. and Shahria, G., 2021. Factors effecting customer satisfaction of mobile banking in Bangladesh: a study on young users' perspective. South Asian Journal of Marketing. This study attempts to pinpoint the most important variables and assess how much of an impact they have on young customers' satisfaction and loyalty to mobile banking. It is a quantitative study, and the main tool for gathering data was a self-administered questionnaire. The review of existing literature and published works serves as secondary source data for developing hypotheses. Out of 300 questionnaires, 279 useable questionnaires were returned. To verify the model and evaluate the hypothesis, these obtained data were examined using the partial least square-structural equation model (PLS-SEM) and Smart PLS (V 327).

This study primarily highlights young people on young people and aims to assess their degree of happiness as well as their preferences, choices, and other important aspects of mobile banking uptake and retention.

Consequently, the study's goals have been developed as follows.

- (1) To identify the key variables influencing customer satisfaction with mobile banking.
- (2) To assess each aspect's importance from the standpoint of Bangladesh.
- (3) To gauge the extent to which each factor affects young consumers' satisfaction.
- (4) To determine the relationship between loyalty and satisfaction in the context of mobile banking.

There were primary and secondary data gathered for this study using both primary and quantitative research methodologies. Young mobile banking customers were asked to complete the questionnaire in order to test the research factors. Cost (three things), security (two items), relative advantage (three items), responsiveness (three items), convenience (five items), customer satisfaction (three items), and loyalty make up the seven research factors (three items) Two sections of the questionnaire were organized.

The first section's purpose was to gather respondents' basic demographic data, while the second section's 22 questions Use a Likert scale of 1 (strongly disagree) to 5 (strongly agree) to rate seven constructs.

Two parts make up the systematic procedure used to study and assess PLS-SEM:

- (1) Analysis of the outer measurement model
- (2) Analysis of the inner structural model

Evaluating the discriminant validity, convergent validity, internal consistency, and indicator dependability are steps in the examination of the outer model. Assessing the an internal structural model that measuring the route coefficient, explaining endogenous variable variation (R^2), multicollinearity check (VIF), and measuring effect size (f^2), comes after analyzing the measurement model and establishing reliability, consistency, and validity [19].

According to the study, loyalty in Bangladeshi mobile banking is strongly influenced by satisfaction. Young clients' happiness with using mobile banking in this country is influenced by a number of things. Among those factors, cost has the greatest bearing. Although it doesn't directly affect loyalty, this factor has a big impact on satisfaction. Bangladesh still has a long way to go before mobile banking is widely used. In order to guarantee client satisfaction with mobile banking, the banking industry, mobile operators, regulatory agencies, and all other concerned bodies should go onwards with a constructive approach. In contrast to other studies on mobile banking in Bangladesh, which show security, trust, and assurance as the dominant factor determining consumer satisfaction, this study reveals that cost has the greatest impact while security and transportation have little influence. Some suggestions are:

- For more consumers to use mobile banking technologies, banks should focus on ways to lower transaction costs.
- Banks might take the effort to make sure that the agent receives sufficient training that will provide them access to the most recent technical information.
- A fast and stable network must be present.
- The correct safety, security, and confidentiality of money and information should be ensured by banks' design and implementation of mobile banking services and apps.
- Only 15 of Bangladesh's 61 scheduled banks presently offer mobile banking services. Mobile banking should be available at all banks.

2.3 Finding the Gapes

There are several gaps that needed to be noted based on earlier conversation. One of the limitations is that there are just a few studies that have been undertaken in Malaysia that look at the external variables that deter customers from using online banking. So that more accurate research of determining major elements that effect consumer satisfaction in Malaysia's banking operation are carried out, additional empirical investigations, such as fundamental causes that hinder online banking usage in Malaysia, need to be done.

The majority of studies focuses on data and information about both developed and developing countries uses of online banking, but there has been relatively little work done to ascertain and pinpoint the variables influencing customer satisfaction with Internet banking in developing countries like Bangladesh, Cambodia, and Nepal. Despite the fact that there is internet banking available in Least Developed Countries, many studies do not mention this information or how it relates to client satisfaction there. Since most studies have neglected the availability of internet banking in Developing Countries, the correctness of data or statistics related to online banking obtained from the website may be impacted.

2.4 Conclusion

This chapter focuses on the successful research projects completed by earlier researchers. These insights enable a better understanding of internet banking. The ideas and literature review served as the foundation for the hypotheses. In the chapter that follows, the approaches employed in this investigation are covered.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter evaluates and analyzes studies on customer satisfaction with online banking systems that are relevant to it. This Chapter divided into few subtopics, namely Literature Review, Sampling Techniques, Sample Size, Area of the study, Tools that applied. The gaps in the literature have also been filled. Next, a chosen and suggested theoretical framework is established in order to effectively illustrate the provided ideas.

3.2 Sampling Techniques

Once I have chosen the sample size of the research then I need to define sampling technique which techniques I would follow for the target population. The Probability sampling and non-Probability sampling are the two basic types of sampling techniques.

Probability sampling: Participants in a survey or other sort of research are picked at random in probability sampling. For a sample to be regarded as a probability sample, each person of the population must have an equal chance of being picked for the study, and the researcher must be aware of this likelihood. Probability sampling is the most common type of sampling used in surveys of public opinion, polls conducted for elections, and other studies whose results will be applied to a larger population. This holds true regardless of how tiny or large the greater population is, such as the number of young women living in a local town or the entire nation.

Non-probability sampling: Non-probability sampling is the process of creating a sample via a non-random method. In order to do this, a researcher might contact people on the street or send their friends a link to a survey. This category of sampling includes any targeted research that specifically chooses from lists, such as aid beneficiaries or participants in a specific training session. In qualitative research, which is more subjective than quantitative research, as well as during the exploratory stage of a research project, non-probability samples are typically used. They are also employed in research with a focus on particular target populations, including maize farmers, which is one of the target populations.

In general, compared to probability sampling, non-probability sampling can be more time- and money-efficient. However depends on a number of variables, including the target population under study. Bias can also be introduced into the sample and findings by specific non-probability sampling techniques. Probability sampling is typically the best approach for general population studies meant to reflect the whole population of a nation or state.

In order to gather primary data for this research project, a non-probability sampling technique is utilized, in which not every member of the population is equally likely to participate in and being chosen for the sample. Purposive sampling is employed due to the restricted availability of clients who utilize internet banking, and the fact that a sizable portion of customers use traditional banking with City Bank, BRAC Bank, and Dutch Bangla Bank. Primary data is the only type of data used in this study. Through interviews with bank staff and customers who have accounts with City Bank, BRAC Bank, and Dutch Bangla Bank, primary data is gathered using a standardized questionnaire. Following its structuring, the questionnaire is given to the respondents. Local residents who hold accounts with afore mentioned Bank were polled using a questionnaire. A few questions were filled out by hand at the Bangladeshi bank listed above.

3.3 Sample Size

There are 500 participants in the sample. We collect data during a very short period of time, and the majority of the data are obtained from students, corporate officer and Engineer, which is why we chose this sample size. The bank is making an effort to improve its internet and online banking services. Therefore, it is quite difficult to conduct research with a high sample size.

3.4 Area of the Study

The study is conducted all over the Bangladesh. But most of the respondent are in Dhaka. Large numbers of respondents are student and few are corporate officer and Engineer.

3.5 Data Analysis Tool Applied

- Matplotlib for Plotting and Visualization
- VS Code as an Editor

3.6 Conclusion

A few ethical principles were followed when the study was carried out. Each participant was first given an explanation of the study's goals and purposes as well as the questionnaires that will be used. After being told the purpose of the study, respondents were assured of their anonymity and confidentiality prior to completing the questionnaire.

CHAPTER 4

ONLINE BANKING IN BANGLADESH

4.1 Introduction

Through a bank's website or mobile app, consumers can access their accounts and basic information about its products and services through online banking. It is a method of doing banking over the internet that offers customers one of the simplest banking systems together with affordable and efficient services. Online banking has expanded quickly in Bangladesh over the years as the nation's financial system incorporates more digital services. Many local and private banks are now offering their services online in light of the demand for quick banking. Internet banking not only offers 24-hour banking services but also aids a nation in connecting to the global corporate and economic systems.

Statistics for Bangladesh indicate that, only 3% of Internet Users are uses Internet Banking [20]. From 1990 to 2020, with a minimum of 0% in 1990 and a top of 24.8 percent in 2020, Bangladesh's average value over that time was 5.41 percent. The most recent figure for 2020 is 24.8% [21].

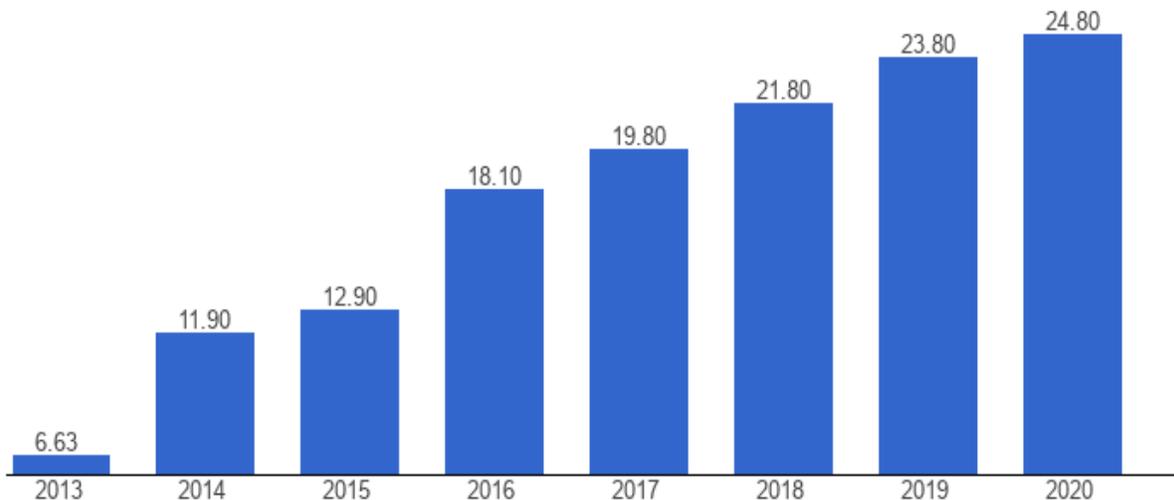


Figure 1: Online Banking Growing in Bangladesh

People all over the world are now engaging in greater activity and business, necessitating the need for quick and 24/7 access to their bank accounts. Online banking also makes it easier to buy and sell a variety of goods that differ from country to country. Many banks in Bangladesh have

introduced with internet banking. HSBC, City Bank, BRAC Bank, Bank Asia, Jamuna Bank, Dutch Bangla Bank, and others are among them.

In an increasingly competitive banking climate, banks are looking to internet banking as a potent "value added" tool to draw in and keep new clients while reducing the need for pricey paper handling and teller encounters. Online banking, sometimes known as Internet banking, is the practice of carrying out transactions, payments, etc. via a bank's secure website. This is especially helpful after hours when banks are closed. Most of the time, a web browser is used, usually one of Internet Explorer or Netscape Navigator, and any standard internet connection is acceptable. Typically, no specialized gear or software is required.

Early in the 2000s, online banking in Bangladesh was introduced, and since then, it has been quickly incorporated into the banking sector. The graph below demonstrates how the quantity of online banking transactions increased in Bangladesh over the course of just a few years. In Bangladesh, 28.8% of people have access to the internet in January 2021. Between 2020 and 2021, there were 7.7 million (+19%) more internet users in Bangladesh. Additionally, the government's initiatives to broaden access to internet services have been incredibly successful. The demand for internet banking will increase as more people use the internet.

The pace of the world is quick. Online banking is crucial in the real-time transaction era. The demand for internet banking is growing as Bangladeshis begin to understand the enormous benefits of using online banking to speed up their transactions and run their businesses more successfully. Bangladesh has 61 scheduled banks and a very high level of competition in the banking sector. Banks are thus compelled to use various cutting-edge e-banking solutions as a "value-added" tool to differentiate their services, reduce their expenses, and increase their existing customer base in order to maintain the viability of their businesses.

4.2 Online Banking in Bangladesh

Online banking is defined as banking done using the internet, which offers customers one of the simplest financial systems with affordable and efficient services. Online banking has expanded quickly in Bangladesh over the years as the nation's financial system incorporates more digital services. Online banking in Bangladesh provides lots of facilities in Bangladesh. Those facilities are described below section.

All the private Banks of Bangladesh provides Online Banking but all are not popular in Bangladesh. Most Popular Online Banking Provided by Dutch Bangla Bank, BRAC Bank, City Bank, Eastern Bank, Islamic Bank, Standard Chartered Bank, HSBC Bank etc. All are Private Bank but Government banks are not offered good service of Online Banking. This is not good for us. Government Bank should increase the Online Banking Scope and Facilities.

4.2.1 Fund Transfer

In Bangladesh BEFTN (Bangladesh Electronic Funds Transfer Network) introduced in February 2011, it was the first paperless electronic inter-bank payments transfer system in the country. It facilitates credit and debit transactions and acts as a lead over check clearing system.

This network can handle credit transfers for payroll, domestic and international remittances, social security payments, business dividends, bill payments, corporate payments, government tax payments, social security payments, and person-to-person payments. In a similar fashion, it accepts debit transactions such as EMI payments, club/association dues, paying insurance premiums and Paying for utility bills. BEFTN processes the majority of government salaries, social benefits, payments for the social safety net, as well as additional payments.

4.2.2 Online Bill Payment

The majority of banks enable registration-free credit card payments using debit cards. To make a payment, you can either directly enter your debit card information into the payment channel or use your debit card at an ATM operated by the bank. Debit card payments can be done at any time and from any location in Bangladesh.

Both debit and credit cards are practical tools for both in-person and online buying. However, you can also use your cards to pay for other expenses including tuition, taxes, and other services like electricity and water. If your due date is drawing near, paying with a card is quick and convenient because you don't have to get your checkbook out. Learn the advantages and disadvantages of using plastic payment methods before using them because they are not always the best choice.

4.2.3 Utility Bill Payments

People's reliance on the internet is growing in Bangladesh as information technology advances. The majority of banks in the nation now offer their services digitally, including mobile transactions. Online payments are accepted for bills for things like gas, electricity, water, phone, and internet services. In the past, people had to wait in line for hours to pay their different payments. Human time is being conserved in the modern system. Here, we'll go over the various methods for making online utility payments in Bangladesh.

The finest method for time and money savings is this one. I find that paying bills online is a very useful way. We can use the Mobile Banking app to pay our utility bills.

4.2.4 Mobile top-ups

One of the well-known and reputable private commercial banks operating in Bangladesh is City Bank. City Bank introduced the City touch online banking app to their devoted consumers in order to make banking easier, faster, and more comfortable for their clients. There are many services that City touch provides. You can use City touch to shop, purchase tickets, pay credit card and mobile bills, send money to schools, manage your current, savings, fixed deposit, and loan accounts, among other things. Similar facilities also provided by Dutch Bangla Bank and BRAC Bank. Using those Online Banking App, users can easily recharge the credit inn their mobile phone.

4.2.5 Mini Statement

One of the five oldest commercial banks in Bangladesh is City Bank, which is also one of the oldest private commercial banks still in operation. Thus, City Bank offered its customers to the City Touch digital banking app in order to make banking simpler, quicker, more secure, and comfortable.

Because of the convenience and excellent performance of this banking app, it has not only encouraged many new customers to move their accounts to City Bank but also strengthened the bonds between existing customers and the bank's banking system. You can conduct seamless internet banking through Dutch Bangla Bank Ltd. and BRAC Bank as well. You are able to monitor your account, statements, pay bills, and complete various transactions thanks to this. A

request for an account statement for the specified time period can be made by the customer. This request will be handled manually by the bank.

4.2.6 Cardless ATM Withdrawal

Cardless ATMs, provide you access to your account and let you make cash withdrawals without a card. Instead, they rely on text message account verification or a smartphone banking app. Cardless ATMs have a number of different ways they might operate. Quick response (QR) codes, near-field communication (NFC), verification codes, and biometric verification are examples of cardless technology types.

QR Codes: You must first enable mobile withdrawal on your banking app in order to utilize a cardless ATM with a QR code. Before the money is dispensed, the ATM will then display a QR code on the screen for you to scan with your phone.

Near-field Communication (NFC): NFC, or near field communication, technology is used by several applications like Apple Pay. Open the app on your mobile device, select the linked bank account you want to withdraw from, and tap your phone against the relevant reader to use NFC at a cardless ATM. The ATM will request that you enter your PIN in order to complete the transaction (just as if you had inserted your card).

Verification Codes: Open the bank's mobile app on your phone to use a verification code, then choose the kind of ATM transaction you want to make. The app will then prompt you to enter your PIN and a one-time code at the ATM. Usually, the code is only valid for a predetermined period of time, like 30 minutes.

Your transaction will be completed once you enter the verification code, at which point the ATM may disburse the amount of money you requested.

Biometric Verification: Your smartphone may utilize biometric verification to unlock itself by identifying your face or fingerprint. Similar to this, some banks allow you to retain your biometric information so that their ATMs can use it to confirm your identity for upcoming transactions. This enables you to carry out tasks like cash withdrawals and other operations without having to present your card.

4.2.7 Tele Banking

One can use banks' services without ever going inside. Tele banking is the name of the tool used for this. Using a telephone to contact a bank is a quick and practical way to do it. Services such account information, conducting particular transactions, reporting the theft of an ATM card, debit card, credit card, or checkbook are all available. Any customer of the bank can apply to use this service. The bank manager, however, has the option to refuse this facility.

All clients who have individual savings or current accounts with the bank providing this option may use the feature. The newest account information is pulled from the bank's records onto a PC through a process known as "Data Pumping," which is performed at regular intervals based on the bank's estimation of the needs of its customers.

In addition to their account numbers, which serve as their log-in IDs, consumers are also issued passwords. Customers should take great care to keep their passwords and PINs private. The customer must use a phone with tone dialing in order to make the call. The client might request to have the checkbook mailed. Only the address listed with the bank receives a courier delivery of such a checkbook.

Customers can do financial transactions over the phone with a bank or other financial institution without visiting a branch office or an automated teller machine. Some financial institutions provide the service around-the-clock, and telephone banking wait times can exceed branch operating times. Tele banking lowers transaction processing costs from the bank's perspective by removing the need for customers to go to a bank office for non-cash withdrawal and deposit transactions.

The following services are provided to consumers through telebanking.

- Balance enquiry in Online.
- Last five transactions.
- Transactions of a recent date
- Request for service.
- Details of transactions.
- Request for a statement of account.
- Request for cheque book.

4.2.8 Credit Card

A credit card is a physical card that can be used for cash withdrawals, bill payments, and making purchases. The simplest way to conceptualize a credit card is as a kind of payday loan.

Your credit card provider assigns you a predetermined credit limit when you open an account. In essence, this is the sum of money that the credit card company permits you to use for purchases or bill payments. A credit card is a type of payment card that is given to customers (cardholders) to allow pay a merchant, based on the amount of debt they have accumulated for goods and services.

Credit cards can be convenient when you need to make a purchase or pay a bill, and they also have the potential to help you save money if you can recoup part of your expenses through incentives. In addition, you can use credit cards to establish a positive credit history by practicing sound money management. Despite having a similar appearance, debit and credit cards function significantly differently. There are a few crucial credit card facts to be aware of if you're new to using credit.

KEY TAKEAWAYS

- You can make purchases using the credit limit on credit cards. Then pay back at a later time.
- Interest fees may apply if a credit card balance is carried.
- When it comes to promotional credit card offers, it's crucial to carefully read the fine print.
- With some credit cards, you can receive cash back, miles, or points as incentives for your purchases.

4.2.9 Debit Card

When a debit card is used, money is immediately taken out of the user's checking account. They are also known as "check cards" or "bank cards," and they can be used to make purchases of products and services, as well as to withdraw cash from an ATM or a business that will let you add more money to a purchase.

A debit card often looks like any other charge card and is a rectangular piece of plastic. It is connected to the user's bank or credit union checking account. The size of the account affects how much money can be spent with it (the amount of funds in the account).

Debit cards function somewhat like a hybrid of credit cards and ATM cards. They can be used to make purchases, like the latter, or to obtain cash from an automated teller machine (ATM) at a bank, as with the former. In fact, many banking institutions are switching over to debit cards that are issued by significant card-payment processors like Visa or MasterCard in place of their standard, one-use ATM cards. Your checking account automatically includes these debit cards.

The debit card works in the same way whether it is used to get cash or make a purchase: It immediately takes money out of the associated account. Your spending is therefore constrained to the funds in your checking account, and the precise amount you have to spend will change day to day along with the balance of your account.

Additionally, debit cards typically have daily purchase limits, which prevent you from using them to make purchases totaling more than a specific amount within a given day. You can use a PIN or not when using a debit card to make a purchase. If the card bears the logo of a significant payment processor, it can frequently be used without one, exactly like a credit card.

KEY TAKEAWAYS

- Debit cards may be used at ATMs to withdraw cash; therefore, they reduce the need to carry physical or cash cheques while making purchases.
- The majority of the time, debit card purchases can be done in the presence or absence of a personal identification number (PIN).
- Debit card daily purchase limitations are customary, so it may be unable to use one to make a particularly large transaction.
- You can be charged an ATM transaction fee if you use your debit card to withdraw cash from an ATM that is not affiliated with the bank that issued your card.
- Some debit cards have incentive schemes akin to those on credit cards, such as 1% cashback on all purchases.

4.2.10 ATM

In essence, an ATM (Automated Teller Machine) is a computer where you may check your account balance, access a number of financial services, and deposit or withdraw cash. This method

eliminates the need to speak with a human teller for many basic banking tasks. Every day of the week, ATM services are typically accessible round-the-clock.

We may carry out a variety of financial operations using an automated teller machine, or ATM, including cash deposits, withdrawals, and fund transfers, account information requests, changing ATM PINs, and connecting the bank account and the adhere number to minimize consumer contact with bank employees.

The automated teller machine (ATM), also known as an automatic banking machine (ABM), enables customers to carry out simple financial operations independently of bank employees. ATMs come in two different varieties (ATMs). The basic one merely permits cash withdrawals and provides a balance report for the account. Another is a more sophisticated device that receives the deposit, offers credit card payment options, and reports account information.

The automated teller machines block diagram largely comprises of two input devices and four output units. The speaker, display screen, receipt printer, and cash depositor are output devices, whereas the card reader and keypad are input devices.

The input devices like card reader and keypad.

Card Reader

An input device that receives information from a card is a card reader. The magnetic strip on the back of the ATM card is used to link with the card reader, which is a component of the identification of your specific account number. Your account information is captured when the card is swiped or pushed on the reader, so the host processor receives the card's data (server). Thus, the host processor uses this information to collect information from cardholders.

Keypad

The card is detected after the device requests additional information, including your identity number, withdrawal, and balance query. There is minimal likelihood that someone else will be able to withdraw money from your account because each card has a different PIN. To protect the PIN code when it is being transmitted to the host processor, several laws apply. Most of the PIN is transmitted in encrypted form. The 48-key keyboard connects to the processor and has a keyboard layout.

Speaker, screen, receipt printer, and cash depositor are the output devices.

Speaker

When a specific key is pushed, the speaker plays audible feedback.

Display Screen

The transactional information is displayed on the display screen. The display panel shows each withdrawal phase. The majority of ATMs have an LCD or CRT screen.

Receipt Printer

The receipt printer publishes all the information pertaining to your withdrawal, including the date, time, and amount of the withdrawal. It also displays your account balance on the receipt.

Cash Dispenser

The ATM's beating center is the cash dispenser. The required funds are collected from the ATM's central system, which is located here. The user can take the money from this section. Each bill must be counted and the appropriate quantity given by the cash dispenser. If the money is folded in some circumstances, it will be relocated to another part and designated as the reject bit. High precision sensors are used to complete all of these tasks. The ATM uses an RTC device to keep a detailed record of each transaction.

Operating an automated teller machine is relatively easy. The next section discusses the ATM operation's step-by-step algorithm.

- You must first go to the local ATM location and insert your ATM card into the machine.
- Choose a language from the list that appears on the ATM monitor, including English and your native tongue.
- Choose the transaction type from a variety of transactions, including deposits, withdrawals, and money transfers.
- Select the type of account, such as savings or current.
- Enter the appropriate withdrawal amount and your 4-digit ATM pin number.
- Bring the cash and your receipt together.
- You can choose the option to perform further transactions as well.

4.2.11 SMS Banking

A type of mobile banking is "SMS banking." Some banks and other financial institutions utilize this feature to deliver messages (also known as notifications or alerts) to their clients' mobile phones using SMS messaging, or they provide a service that allows consumers to execute some financial transactions by SMS.

The Concept of Push & Pull Messages

Push messages or pull messages could be used to deliver the SMS Banking services. Push messages are notifications that banks or other financial organizations send to a customer's mobile device without the user first requesting any kind of information. Push notifications typically take the form of a mobile marketing notification or message. Additionally, it might operate as a warning for some activity occurring in the user's specific bank account, such as a a money transfer, a money deposit, or a credit card purchase and others.

On the other hand, in the SMS Banking scenario, the pull messages make reference to the OTPs (One Time Passwords). Banks and other financial organizations are using OTPs as one of the most recent techniques to combat various online frauds and crimes. In the provided pull message system, OTPs are sent via SMS to the users' mobile phones in place of the more traditional by-heart passwords. When using mobile or internet banking, enter the OTP to finish financial operations. The OTP distributed to users has a finite lifespan and becomes invalid after being successfully used in a transaction.

Push & Pull Services in SMS Banking

Users can choose the type of SMS Banking services they would like to employ based on their level of convenience. Mobile banking or phone selection of SMS banking services is an option.

In SMS Banking, some of the typical push services include:

- periodic account balance delivery
- Reporting of credits for things like salaries and other financial inflows into a bank account
- Not enough money in the account
- Notification of a payment due
- Money taken out of the account

- Cheque payments completed
- OTP creation and authentication (One Time Passwords)

In SMS Banking, a few of the typical pull services are as follows:

- Electronic bill payment
- Checking the balance of the account
- To obtain the mini statement, please.
- Fund Transfer
- Requesting information on the FD (Fixed Deposit) rates

Benefits of SMS Banking

The advantages that SMS Banking offers are numerous. These are a few:

- You can utilize SMS Banking to send and receive pertinent banking information using your phone.
- Using the idea of SMS Banking, you can check your account balance, manage your account, pay bills, and carry out a wide variety of financial operations.
- Provides greater convenience because fewer trips to the bank are required.
- Accessing your bank account information quickly and easily when you need it.

4.2.12 Call Centre

The goal of a call center is to deliver your preferred services over the phone, whenever and wherever you need them. Bangladeshi Banks are offering 24 hours Customer Service in an effort to providing 24/7 one-stop service for cherished customers. Customers can now obtain any service with a single phone call from anywhere at any time, eliminating the need to rush to a branch or wait for banking hours. A specific networking system in the call center service allows 30 customers to call and connect at once. A one-stop shop for all of your questions is the call center.

4.3 Popular Services for Internet Banking in Bangladesh

Some popular services that provided by the popular Bank of Bangladesh that are mention below.

4.3.1 BRAC Bank

BRAC Bank Limited offers a variety of new customer-focused products as well as alternative delivery methods such as cash management, debit card, mobile banking, internet banking, and ATM services.

Your banking experience will go more smoothly and you'll save time and money with the Digital Products. Additionally, BBL offers a two-factor authentication mechanism that boosts transaction security and can thwart any kind of online hacking.

Just one year ago, BRAC Bank's digital banking was 16–17%; today, it is 42%. Between 2018 and 2020, BRAC Bank invested an average of Tk170 crore on technology [21].

The bank recently disclosed that it would also make its internet banking services available for self-registration using credit cards. The bank has released the "Brac Bank Astha" mobile app, which customers can use for all types of banking transactions.

4.3.2 IFIC Bank

Customers of IFIC Bank can access a variety of internet banking features. They offer services including maintaining account balances, looking up transaction histories, transferring money between accounts, looking up credit card limitations, disabling any card, requesting a checkbook, getting bank certificates, and many more online.

4.3.3 Standard Chartered Bank

The internet banking capabilities provided by Standard Chartered Bank are quite modern and active. You can use their internet banking services, which include PIN resets, checking A/C statements, printing and downloading statements, and financial transfers.

These are only a few of the Bangladeshi banks that provide internet banking. With time, countless banks are becoming more and more virtual, and very soon, every bank won't just offer this—their whole existence will depend on it.

4.3.4 Dutch Bangla Bank

The first bank in Bangladesh to fully automate and use electronic banking is Dutch-Bangla Bank. Although the automation was finished in 2003, new features and enhancements are always being introduced. The very same automation system is now being employed by numerous major international banks, including Dutch-Bangla Bank Ltd. Although this was much more expensive than alternatives, the client's piece of mind is worth the tiny additional cost.

A client of Dutch-Bangla Bank Ltd now has unmatched access to banking from any branch, ATM, or POS of Dutch-Bangla Bank Ltd. These are all completely free services that are also surprisingly inexpensive for everyone. Dutch-Bangla Bank Ltd has invested more than any other bank in electronic banking, although the sector was never meant to be profitable. It was carried out with the same mentality that guides Dutch-Bangla Bank Ltd CSR initiatives. Due to this, you pay essentially nothing even if other nations and banks would charge much more for comparable services. Never before has a bank offered so much for nothing.

4.4 Future of Online Banking in Bangladesh

Online banking will eventually give many people access to new professional prospects. There will be a rise in demand for digital professionals, cyber security experts, web designers, app developers and programmers, banking customer experience experts, risk and compliance officers, quantitative analysts, data specialists, and other jobs related to digital banking despite the fact that digitalization is decreasing demand for jobs like bank tellers and other branch clerks.

Internet banking is a technology that is keeping up with the world's transition to a quick, mobile, and dynamic civilization. Not only is waiting in line for any service time-consuming, but it is also quickly becoming obsolete. Online banking is available to make our financial activities simpler and more comfortable in this age of quick, portable actions.

The moment has come for Bangladesh to embrace online banking technology, advance financial activity digitization, and move closer to the idealistic 21st-century world that we all aspire to.

4.5 Conclusion

The newest generation of electronic banking transactions, known as online banking, provided new opportunities for the already established banks and financial organizations. Although the majority of banks have websites, not all of them offer internet services. The banks' lack of an IT infrastructure and adequate security measures was the primary cause of this. The policy for the development of the IT sector was released by the Ministry of Science, Information, and Communication Technology. To get the conclusion that e-banking offered further advantages. Online banking enhanced these characteristics as well. For instance, developing new markets and lowering operational, administrative, and manpower expenses are increasingly key factors for the competitiveness of banks. Therefore, Bangladeshi banks should utilize these benefits of e-banking as soon as possible in the Bangladeshi economy.

CHAPTER 5

CUSTOMERS SATISFACTION THROUGH ONLINE BANKING IN BANGLADESH

5.1 Introduction

The provision of various electronic networks, including the Internet, mobile devices, televisions, and telephones, to conduct banking transactions is referred to as "electronic banking services". Customers' needs and Today, there are more people who desire financial services and wish to use them anytime, anywhere, without any cost-effective time or location restrictions.

In reality, Finland was the first country to adopt an automated teller machine (ATM), which gave banks access to a new market and made Finland the pioneer of electronic banking long before any other nation did. Due to the development of Internet capabilities and increased bank competition, this method of banking is now commonly used by consumers. This led to the development of the concept of "customer perceptions of the outcome of the service combined with recovery, perceptions if a problem should occur" in the definition of Internet banking service quality.

Despite the fact that there are many different ways to define it, Workplace contentment has long been researched. One of the earliest definitions of this phrase was provided by Hoppock, who described it as "a number of psychosomatic conditions which induce people to express satisfaction toward a certain service or product". In contrast, Locke defined satisfaction as "a good and joyful response associated to some variables such as job items or services" in 1969, and this definition has since been widely accepted (Locke, 1969) [22]. Customer satisfaction is defined as "a pleasant emotional state arising from analyzing one's experiences and has multiple characteristics, including quality, services, and warranty".

5.2 The Impact of Customer Satisfaction towards e-banking in Bangladesh

The banking industry in Bangladesh has been greatly impacted by e-banking. E-Banking is the practice of using bank services and products via the internet. E-banking is the integration of traditional banking with telecommunications tools. In Bangladesh's banking industry, online banking has significantly changed things. Bangladeshi banks have responded quickly to this trend

despite the unstable climate. Since its inception in Bangladesh, the introduction of online banking has simplified the banking process.

The idea has elevated Bangladeshi banks to a new level, allowing them to successfully compete with other banks around the globe. The banking sector thinks that by implementing the newest technology, online banking, and banks will be able to boost customer service and forge stronger bonds with their clients. Online banking in Bangladesh still has its share of difficulties, including fraud, protracted wait times for reversed transactions, huge lines, and more.

5.2.1 Service Quality

E-service quality is described as a consumer's overall assessment and judgment on the caliber of the services in the setting of the internet. A scale to rate the quality of e-services was required as traditional service delivery channels gave way to electronic ones. Numerous scales have been devised by researchers to assess websites. This scale was based on twelve criteria, including interaction, reaction time, trustworthiness, responsiveness, design, intuitiveness, visual appeal, originality, flow, emotional appeal, integrated communication, business processes, and substitutability.

Have proposed nine service quality dimensions for online banking, including effectiveness, dependability, responsiveness, fulfilment, privacy, communications, personalization, technology update, and logistical/technical equipment. As essential dimensions for internet banking, the first five dimensions have undergone testing. Two more crucial service quality facets for internet banking were found to be communication and personalization. The primary service quality dimensions for customer happiness in e-banking, according to Nupur's investigation on the effects of e-banking variables on customer satisfaction in Bangladesh, are dependability, responsiveness, assurance, empathy and tangibles.

5.2.2 Web Design and Content

The qualities and content of websites have a significant role in influencing online purchasing decisions and maintaining visitors' interest across the website. Therefore, it is crucial to research which e-banking services are most valued by users and how they relate to the content and design

of bank websites the websites' color schemes, text style and format, graphics, 2D or 3D image kind and quality, and the ease with which they are organized and constructed. The ease of interacting with the content, the simplicity of locating and displaying what is crucial, the speed of navigation, the loading time, and the size of pages are all factors that affect webpage usability, making it one of the most crucial aspects to consider when assessing the quality of a website.

Websites play a vital role in a bank's client communications and marketing efforts. Therefore, as it will have an impact on client satisfaction, website content is crucial. Customer happiness is significantly influenced by web design and content.

5.2.3 Privacy & Security

Problems with online banking that are related to security, privacy, and fraud. You can think of privacy as both a legal idea and as a right to solitude. The term claim of individuals, groups, or institutions to decide for yourself when, how, and to what extent you want others to know information about you. Can also be used to refer to someone's right to privacy. The customer's expectation that an online company will treat their information properly can be regarded from the perspective of privacy as trust.

Information privacy, physiological privacy, communication privacy, and territory privacy are the four fundamental types of privacy. Information privacy primarily refers to the internet. The ability to manage information about oneself is referred to as information privacy. When people lose a significant amount of control over how their personal information is used, privacy is invaded.

The three main components of information security are confidentiality, integrity, and availability. A common benchmark for assessing information system security, including in the context of e-commerce, is the acronym CIA. Purely technical problems, environmental occurrences, or unintentional or deliberate human factors can all have an impact on all three aspects of security.

A sort of protection to guarantee client safety and stop hackers from violating consumer privacy is known as security. Security had a big impact on customer satisfaction. Privacy is a significant issue that frequently causes customers anxiety. Customers constantly have the hope that banks will

protect their personal and financial data, especially when they do transactions online. Privacy has a significant impact on customer happiness.

5.2.4 Ease of Use (User Friendly)

A user-friendly app is one that the user can trust and that is intuitive, simple, and easy to use. The program is simple to use once you have it, and users don't benefit from high levels of complexity. Another aspect that influences the use of internet banking is its simplicity. In online banking, where different services needed by consumers can be set up online by the bank, there is a positive correlation between usability and service delivery. Customers must find the technology breakthrough "easy to use" in order for them to embrace and employ online banking. Customer levels of satisfaction were directly impacted by the use of internet banking. In other words, if the services are simple to use, customers will accept or continue to utilize online banking. The website and all services should user friendly. When customer feel the application is more easy to use then they increase the use of the application.

5.2.5 Relationship between Service Quality and Customer Satisfaction

High-quality services that satisfy customers improve a company's capacity to compete in the market. High service quality can be achieved by identifying service problems and creating measurements for service performances, outcomes, and customer satisfaction. Customer care and service excellence are seen as critical business factors since they have a significant impact on how well a firm maintains its customer base through service. Strong service quality is thought to lead to client satisfaction, which will encourage customer loyalty and retention.

Service quality is determined by comparing customer expectations and service performance. Service quality can also be assessed using the differences between expected and perceived services.

5.2.5.1 Service Quality

Customer opinion of a company's overall long-term service performance is known as service quality. Although the definition of good service quality is obvious, because it is based on

perceptions, and because perceptions are highly personal to each individual, it can be difficult to quantify.

A model for evaluating service quality was first proposed in 1985. It was then improved in 1988 and again in 1991 in response to feedback from other researchers [23]. The SERVQUAL methodology, which assesses the high quality of a service based on five dimensions—tangibles, reliability, responsiveness, assurance, and empathy—asks participants 22 questions to ascertain how they perceive and perform a certain service. One of the 22 questions, for instance, asks if a company personnel deliver their services on time, which, if true, would demonstrate dependability. Whereas the capacity to deliver the promised service with dependability and accuracy is the definition of reliability. Each dimension has four questions, and a good response indicates that, in terms of service quality, that dimension has been met.

Many scholars and businesses have utilized SERVQUAL to gauge the caliber of specific services. The validity of the model's attempt to quantify service quality was reevaluated by Robinson (1999), who came to the conclusion that it might not be as viable as many had previously thought. He came to the conclusion that SERVQUAL is most useful in settings similar to its original one and that updated models must be developed. Despite the criticism, SERVQUAL has been extensively employed in a number of previous studies for a very good reason. mostly because to its skill at offering a framework for assessing service quality that can be altered to best suit the unique conditions of a particular company.

The evaluation of service quality is a complicated process that involves many different considerations. Although SERVQUAL makes an effort to take into account all facets of a service when assessing its quality, it has nonetheless received significant criticism. Therefore, it is crucial to identify a characteristic that may be more readily measured for the purposes of this study and that may indicate a good perception of service quality. Specifically, client satisfaction, which will be covered in more detail below. However, in this thesis, the SERVQUAL dimensions will be used to lay the groundwork for the experiment, creating an objectively positive service experience in the scenarios of the experiment, which will be covered in more detail in the methodology.

5.2.5.2 Customer Satisfaction

The idea of customer satisfaction can be characterized as a consumer fulfillment reaction in which customers feel satisfied with the good or service they have acquired. Furthermore, rather than focusing solely on the fulfillment reaction following a purchase and chose to emphasize the entire consumer experience as the foundation of customer happiness. More specifically, the total consumer experience takes into account elements including product quality, price, functionality, and personal advantages. Customer experience is a comprehensive satisfaction that is more lasting than just transaction-based satisfaction, add support to this.

In contrast, comprehensive satisfaction is the level of satisfaction attained after taking into account all facets of a customer-business interaction. Transactional satisfaction can be defined as the level of satisfaction attained from just the transaction between the customer and the firm. One explanation for this is that customers are more likely to repeat the transaction with that business repeatedly if their overall experience is pleasant.

One of the most extensively researched marketing subjects is customer happiness. It is a feature that serves as the primary objective for the majority of businesses and is frequently a recurring theme in almost all organizational endeavors. This is due to the fact that maintaining existing clients is more profitable than constantly seeking out new ones. Additionally, it is a very old idea that has been researched for more than 200 years. Which would imply that it won't change in the approaching years and is thus a crucial area on which firms should concentrate in order to encourage longevity.

Customers Satisfaction depends on how they are satisfied on the application. If they feel better they continue the use. So, Every Banks authority must focuses on customers' needs and demand. Then they increase the uses of Online Banking

5.2.6 Convenience

Customers that utilize Internet banking primarily use it for its convenience. According to earlier studies, the majority of clients valued convenience when using Internet banking. Customer satisfaction was found to be positively correlated with ease of use.

The easier methods of conducting banking transactions were more important to customers who used Internet banking. Customer satisfaction with Internet banking is related to convenience

5.2.7 Speed

Speed can be defined as the frequency of network connection failures, the length of time it takes to traverse an Internet banking website, the time a client spends waiting for a page to load, and the speed at which banks respond to consumer complaints. Usually, the extensive and high-resolution graphics and the slow host server slowed down Internet banking. Speed played a crucial role in the development of e-banking. Speed had a favorable, significant effect on customer satisfaction. Customer satisfaction with online banking is correlated with speed.

5.2.8 Merits

Electronic, interactive communication channels are used to deliver innovative and classic banking products and services automatically to customers. Online-banking systems include those that let Customers of financial institutions can access their accounts whether they are individuals or businesses, conduct transactions, or get information on financial products and services through a both public or private network, including the internet. An intelligent electronic device, such as a personal computer (PC), personal digital assistant (PDA), automated teller machine (ATM) kiosk, or touch-tone phone, is used by customers to access online banking services.

Merits of Customers are given below

- Online banking deliveries 24*7 services to Customers.
- In a quick time can easily access to the account information.
- Can easily made payment for online purchase of goods and services.

- Customers can easily transfer the fund electronically from one place to another place.
- The user can use ATMs to get money at any time.

With e-banking, customers may check their account balances, acquire account statements, apply for loans, and gather other data.

5.2.9 Demerits

Some Demerits are given below

- Some credit units include a small selection of products.
- For membership, one must be eligible.
- To join, one must pay a membership fee.
- Tiny local cooperatives that provide savings and credit work hard to meet the level of convenience. Despite the fact that many of their clients are members of the shares network, several banks provide their customers a wider range of services.
- Providing your card information when shopping online can be risky.
- Abuse of bank cards by fraudsters at ATMs.

5.3 Conclusion

The third wave has brought about many changes around the world, and the financial sector has benefited immensely from things like electronic banking. The primary electronic distribution method in the banking industry nowadays is online banking. Despite every obstacle, banks are establishing supplemental distribution methods to please their customers. As a result, it can be said that online banking services have significantly improved banking services. However, customer satisfaction has not yet been significantly impacted by this, as evidence abounds of the daily difficulties customers face when using any online banking products, especially the automated teller machine (ATM). Because of this, Bangladesh's daily banking operations continue to be characterized by lengthy lines. Customers have cited a variety of problems, including poor network performance, security risks, and power outages, as the cause of their displeasure with the online banking service.

CHAPTER 6

DATA ANALYSIS & INTERPRETATION

6.1 Introduction

This chapter offers the results' patterns and analysis in relation to the put forward hypothesis. In order to test the hypothesis, data from 500 respondents is gathered and analyzed using Matplotlib the truthfulness of hypotheses. Tables are used for the results display. That is throughout the chapter, there are three major sections: scale evaluation through measurement and inference. Analyzing and interpreting data requires looking at survey questions. I made an effort to understand the customer's perception of the online banking system. Customers' opinions were surveyed, and many scenarios were discovered. Only relying on secondary sources and staff is not an option. Only after receiving the appropriate feedback from the users can we draw a conclusion. The survey's findings accurately reflect how customers feel about online banking.

6.2 Data Analysis

Modifying, processing, and cleansing raw data is the process of conducting data analysis in order to extract pertinent information that will support business decision-making. One of the key components of a research is the analysis of the data. I created a Google form to collect data for the research.

But using VS Code and Matplotlib helped to make my job of evaluating the data a little bit simpler. These resources were really helpful for my research because it was a descriptive study.

The section will demonstrate how the data collection process relates to the paper's research goal. Here, I performed primary data research, and then I used MATLAB to compute percentages and display the graph, or pie chart, using the information collected from the clients in the questionnaire.

6.3 Level of Customer Satisfaction on Online Banking

There are a few questions about the respondents' degree of satisfaction. The questions include: Security, accessibility, privacy, time and energy savings, anytime/anywhere use, lower the cost of transactions, E-Statement, Free from carrying cash, Understanding of usage, respondents' use of online banking, their most-frequented conventional bank, and their level of satisfaction with the services offered by online banking.

1. Do you satisfied on Online Banking Safety?

- a. Highly Satisfied
- b. Satisfied
- c. Neutral
- d. Dissatisfied
- e. Highly Dissatisfied

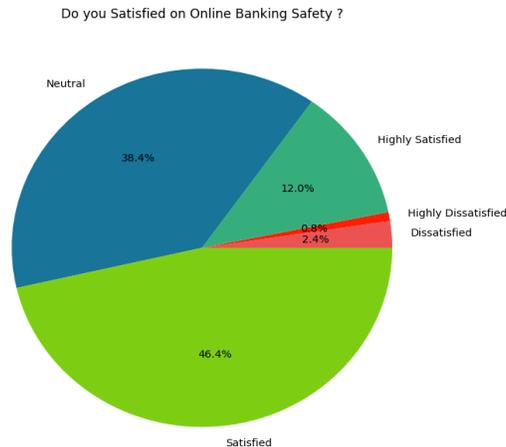


Figure 2: Safety Level of Respondents

In the first question, I asked customers that Online Banking is Safety or not. Here 46.4% Customers are satisfied on Online Banking Safety. 38.4% customers are responses Neutral and 12% are Highly Satisfied. Few number of customers are Dissatisfied and Highly Dissatisfied those percentage are 2.4% and .8%. Most of the respondents are satisfied on Online Banking Safety.

2. Online Banking is Easy to Update Information?

- a. Highly Satisfied
- b. Satisfied
- c. Neutral
- d. Dissatisfied
- e. Highly Dissatisfied

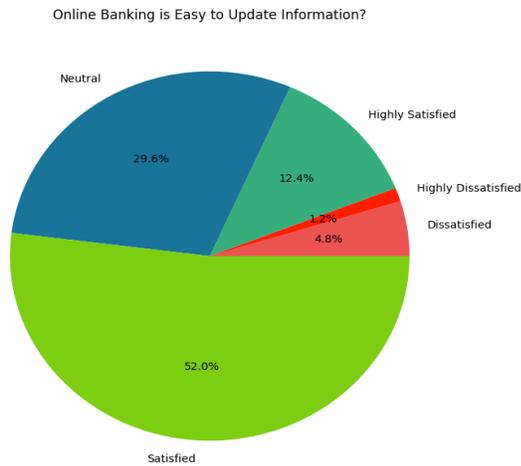


Figure 3: Level of Respondents on Update Information

In the above chart we can get clear understanding 52% customers said their satisfied on Online Banking Update Information. Whereas 29.6% are Neutral and 12.4% are Highly Satisfied. 4.8% respondents are Dissatisfied and 1.2% are Highly Dissatisfied.

3. Do you Satisfied on Online Banking Privacy and Security?

- a) Highly Satisfied
- b) Satisfied
- c) Neutral
- d) Dissatisfied
- e) Highly Dissatisfied

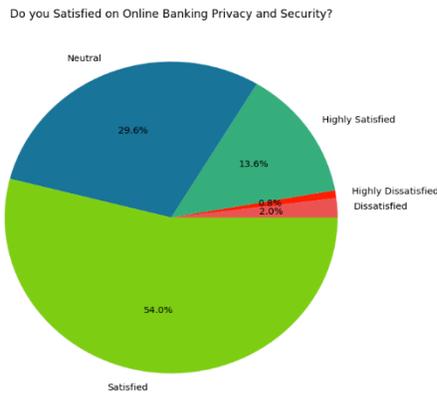


Figure 4: Level of Respondents at Privacy and Security

Above chart we can clearly understand that most respondents are satisfied on any time anywhere use of online banking which percentage is 54%. The second most respondents are 29.6% which are Neutral. 13.6% said Highly Satisfied to Online Banking Privacy and Security. 2% respondents are Dissatisfied and .8% respondents are Highly Dissatisfied in any time anywhere use.

4. Can Online Banking Save your Time / Energy?

- a. Highly Satisfied
- b. Satisfied
- c. Neutral
- d. Dissatisfied
- e. Highly Dissatisfied

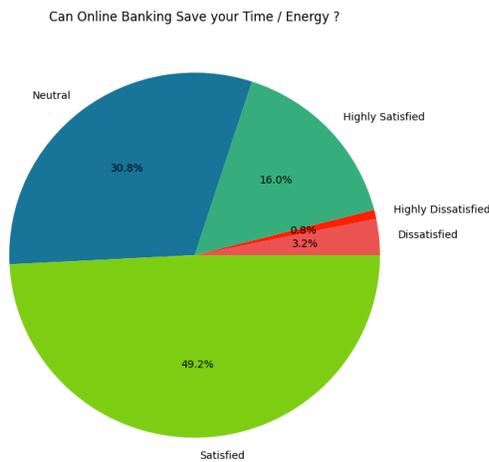


Figure 5: Level of Respondents at Save Time and Energy

From total respondent half of the respondents are put response Satisfied to Save Time and Energy. The percentage is 49.2%. Second most respondents are Neutral with the percentage of 30.8%. 16% respondents put responses as Highly Satisfied. Lowest responses is Highly Dissatisfied which percentage is .8% and second lowest is 3.2% which is put responses as Dissatisfied.

5. Is Online Banking User Friendly?

- a. Highly Satisfied
- b. Satisfied
- c. Neutral
- d. Dissatisfied
- e. Highly Dissatisfied

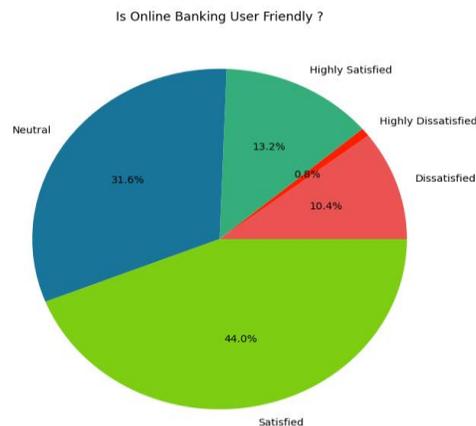


Figure 6: User Friendly level of Respondents

44% Customers put responses Satisfied which is the most than other options. Highly Satisfied and Neutral are getting consecutively 13.2% and 31.6%. Lowest percentage is .8% which is Highly Dissatisfied and only 10.4% customers are responses Dissatisfied.

6. Can use Online Banking Any Time / Anywhere?

- a. Highly Satisfied
- b. Satisfied
- c. Neutral
- d. Dissatisfied
- e. Highly Dissatisfied

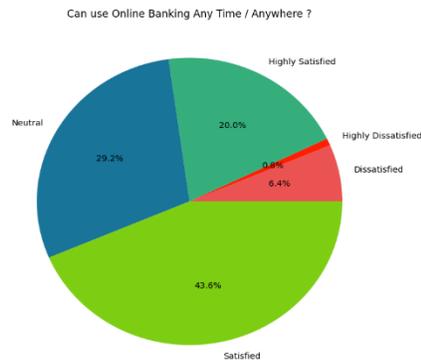


Figure 7: Respondents level at any time anywhere use

43.6 % respondents are Satisfied on any time anywhere use. Whereas 20% respondents are Highly Satisfied and Neutral are 29.2% respondents. Highly Dissatisfied and Dissatisfied respondents are .8% and 6.4%.

7. Online Banking Reduce Transaction Cost?

- a. Highly Satisfied
- b. Satisfied
- c. Neutral
- d. Dissatisfied
- e. Highly Dissatisfied

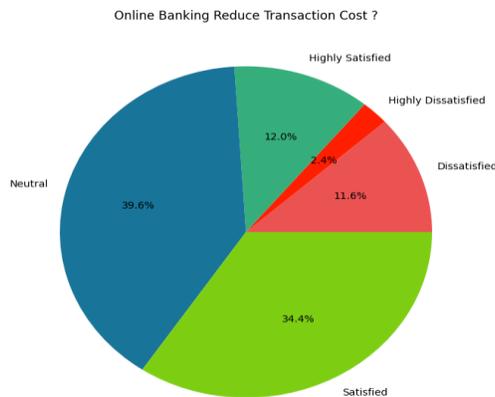


Figure 8: Level of Respondents Reduce Transaction Cost

34.4% respondents put response as Satisfied in Reduce Transaction Cost. 39.6% are said Neutral and 12% respondents are said they are highly Satisfied 11.6% respondents are dissatisfied and less percentage is 2.4% which are Highly Dissatisfied on reduce transaction cost of Online Banking.

8. Free from Cash Carry?

- a. Highly Satisfied
- b. Satisfied
- c. Neutral
- d. Dissatisfied
- e. Highly Dissatisfied

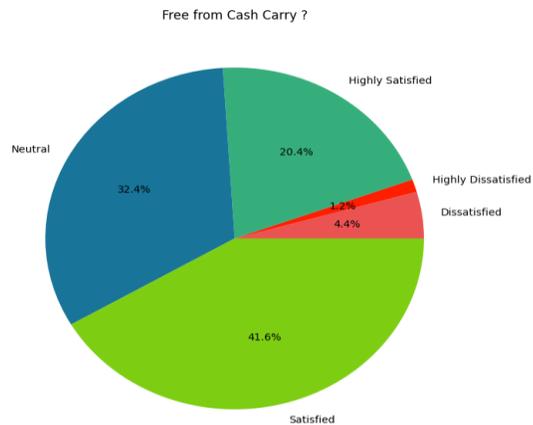


Figure 9: Level of Respondents at Free from Cash Carry

The largest amount of respondents are said they are Satisfied which percentage is 41.6%. Whereas 20.4% customers are put responses highly satisfied and 32.4% respondents are Neutral. Respectively 4.4% and 1.2% respondents are Dissatisfied and Highly Dissatisfied.

9. E-Statement?

- a. Highly Satisfied
- b. Satisfied
- c. Neutral
- d. Dissatisfied
- e. Highly Dissatisfied

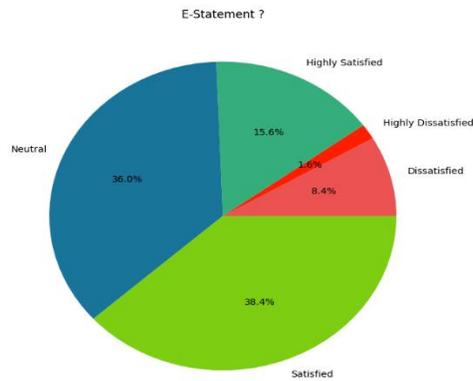


Figure 10: E-Statement Level of Respondents

38.4% respondents are satisfied on collect e-statement using Online Banking. 16.6 % respondents are Highly Satisfied. Whereas 36% respondents are put responses Neutral. The lowest percentage is Highly Dissatisfied which percentage is 1.6%. 8.4% respondents are Dissatisfied.

10. Online Bill Pay?

- a. Highly Satisfied
- b. Satisfied
- c. Neutral
- d. Dissatisfied
- e. Highly Dissatisfied

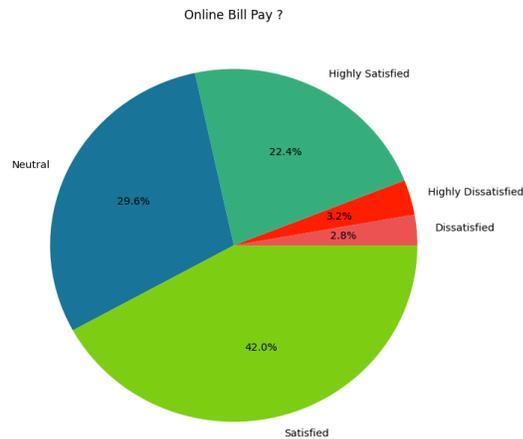


Figure 11: Level of Responses for Online Bill Pay

Most of the online banking users pay bill using online banking. In my survey 42% respondents are responses as Satisfied and 22.4% responses are Highly Satisfied to online bill pay. 29.6% respondents are put response Neutral and 3.2% customer's responses they are Highly Dissatisfied and 2.8% are dissatisfied.

11. Fund Transfer?

- a. Highly Satisfied
- b. Satisfied
- c. Neutral
- d. Dissatisfied
- e. Highly Dissatisfied

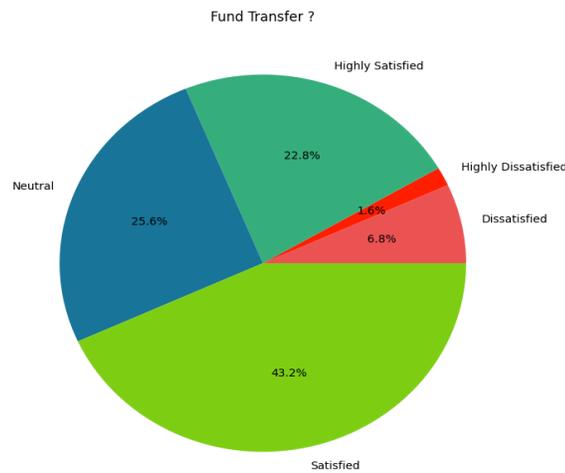


Figure 12: Level of Respondents at Fund Transfer

43.2% customers responses Satisfied and 22.8% are Highly Satisfied. Whereas 25.6% respondents are put response Neutral. Respectively 1.6% and 6.8% are Highly Dissatisfied and Dissatisfied.

12. Online Banking is Easy and Convenience to Use?

- a. Highly Satisfied
- b. Satisfied
- c. Neutral
- d. Dissatisfied
- e. Highly Dissatisfied

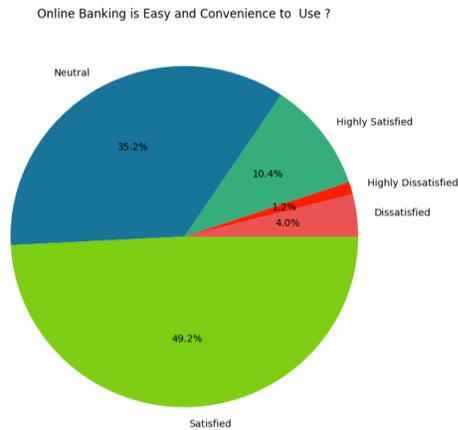


Figure 13: Respondents level at Easy and Convenience to Use

49.2% customers are satisfied to that Online Banking provides strong security but 4% customer opinion is dissatisfied to provide strong security.35.2% are Neutral and 10.4% are Highly Satisfied. The Lowest percentage is 1.2% which is Highly Dissatisfied.

13. Overall Satisfaction?

- Highly Satisfied
- Satisfied
- Neutral
- Dissatisfied
- Highly Dissatisfied

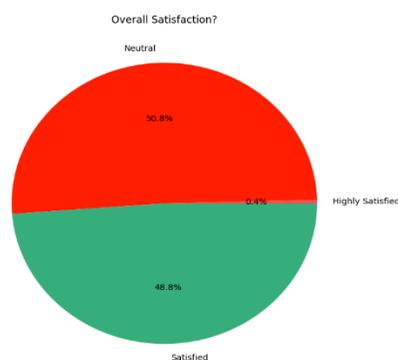


Figure 14: Respondents level at Overall Satisfaction

48.8% customers put responses that they are satisfied to overall satisfaction to Online Banking. Whereas 50.8% are Neutral and only .4% are Highly Satisfied. But nobody is dissatisfied and highly dissatisfied on overall satisfaction.

6.4 Findings

- One of the finding is that Old age people is not interest in Online Banking. They are not technically sound. So they think Online Banking is Complex than traditional Banking.
- Another Finding is most of the online banking user don't know how to transfer money using online banking application. First time they need to help other and they are tense until the receiver confirmation.
- Additionally, I discovered that customers are worried about cybercrime and hacking difficulties, so they don't feel completely secure after using the bank's online service.
- Customers of private banks in Bangladesh were dissatisfied with the lack of ATM booths, with the exception of Dutch Bangla Bank, and the paucity of government bank ATMs, I learned when it came to ATM services.
- Lots of Banks Online Banking System is not Up to Date. So Customers faced lots of problems like Server Error.

6.5 Result & Discussion

The primary goal of the study is to determine the customer satisfaction on online banking in Bangladesh. Research result shows that customer are satisfied on Online Banking system in Bangladesh. Customer have a positive relationship between all the attributes of Online Banking. But some attributes impact the more to their customers.

The result Pointed out that customer are satisfied with safety, Privacy and Security, Easy and Convenience to use, Easy to Update Information, Save Time and Energy, Anytime an where use, Free from cash carry, Online Bill Pay, Fund Transfer, User Friendly and Overall Satisfaction on Online banking of Bangladesh. In my research survey it is clears that most of the factors 42% to 54% respondents are satisfied and 25 % to 38 % respondents are put responses as Neutral. Whereas 12% to 22% Customers are Highly Satisfied. 2% to 10 % customers are Dissatisfied in different variable of Online Banking. Sometimes it increased up to 11.6%. Less responses is Highly Dissatisfied. Which percentage is 0.8% to 3%. The Overall Satisfaction of Online Banking is 48.8% customers are satisfied on online banking and 50.8% are Neutral. 0.4% customer are Highly Satisfied. But no responses are dissatisfied and highly dissatisfied. So the clear picture is customers

are satisfied on Online Banking. Additionally, top-level bank managers in Bangladesh should be concerned with the responsiveness factor in order to devote all bank resources to ensuring customer satisfaction. Employees may be able to work effectively and efficiently with this outcome.

According to the survey's findings, the quality of banking services through Privacy, Safety, User Friendly, Easy to Access, E-Statement, Anywhere Use, Update Information, Reduce Transaction Cost, Online Bill Pay and responsiveness has a significant impact on customer satisfaction, making it potentially helpful information for academic and management personnel. The participants also reported that the bank's human resource management is not flawless in how it handles the behavior of its employees. According to the participants, the bank's workers need to be given more authority outside of the bank in order to provide the appropriate information to the appropriate customers. The analysis of the data showed that most of those who responded claimed that Customers of banks are paid equally. The majority of survey respondents claim that, the nature of work expectations produces some stress.

6.6 Conclusion

In this chapter I analysis my collected primary data try to find out the Customer satisfaction level in different sector. I used two tools for analyze the data. I use Matplotlib for plotting the data and visualization. Used vs code as a code Editor. The result suggests that customers will respond more favorably to online banking if they are aware of it. For the successful introduction of electronic banking, the banking sector's infrastructure still needs work. Although just Private Banks offer electronic banking services, this needs to be reviewed as time goes on. Additionally, the study's findings show that although clients need to use an electronic banking system, its degree of credibility isn't yet there.

CHAPTER 7

CRITICAL APPRAISAL

7.1 Introduction

The growth of information and communication technology has been increasingly important to Nigerian banking operations during the past few years (ICT). The main trend in every nation nowadays is the use of ICT for service delivery. The banking sector in Bangladesh is not exempt from the same. Nevertheless, we discovered that banks of all types—public and private are also expanding their banking networks by concentrating information and communication technology and a variety of electronic tools, such as ATMs, Internet banking, mobile banking, POS terminals, and green channel banking, among others. The majority of banks are investing much more financial and human resources in the expansion of e-banking services.

However, we found that the use of these services and the e-banking channel falls far short of what banks and policymakers had anticipated. Actually, it is necessary to determine the underlying causes and come up with appropriate answers. As a result, the current article made an effort to pinpoint the variables that are crucial for the widespread use of e-banking services. It enables bankers to effectively utilize e-banking channels and eases the workload on front desk counters at financial institutions.

7.2 SWOT Analysis

SWOT analysis relates to an organization's advantages, disadvantages, opportunities, and threats. In order to clearly define the direction and goals of the industry, make an immediate decision, and make all the necessary changes to deal with the issue, a SWOT analysis, or strategic plan, is used. It identifies which strengths can be used to build, which weaknesses must be addressed, which opportunities can be taken advantage of, and which threats must be defended. Digitalization is bringing about a period of unheard-of innovation in banking. The SWOT analysis is carried out to determine the internal and external issues that could affect digital banking.

7.2.1 Strengths

Bangladesh's rapid expansion of digital banking has boosted consumer expectations for quick, individualized service in the present. Day by day lots of customers are start using Online Banking Application and they are try to cope up with the online banking. In below I mention some Strength of the Online Banking of Bangladesh.

- Customers can access any time.
- Online Banking save lots of time.
- Faster transaction at a lower cost.
- Online Banking is Convenience for Customers.
- Competitive edge for scale economies.
- Offer more efficiency and improved convenience.

7.2.2 Weakness

Weakness is what you could improve and the sort of practices that you should avoid. In below I mention some weakness of Online Banking in Bangladesh.

- Now a day's digital payment is increased and the frauds are also increased tremendously. This the prime reason why people are away from Online Banking. Need security issue in digital mode.
- Banks are improve the technology and offering new feature but customers are slow to adopt the new feature.
- Responsiveness to the world economy.
- All over the Bangladesh Internet is not available. So use of online banking is depends on ability of Internet.
- Only focus on a specific client.

7.2.3 Opportunities

Opportunities are periods of time or possibilities for good things to occur. Some opportunities of Online Banking in Bangladesh are given below

- Increasing understanding of the advantages of digital banking.
- Bringing domestic banks into contact with international markets.

- In urban area banks are entered but not all villages. Must reach all villages.
- Need to be improved in area such as risk management and CRM.
- Creating a modern technology to prevent system malfunctions and offer an effective and secured platform for online transaction.

7.2.4 Threat

Anything that could threaten or negatively impact. In below mention the some online banking threat.

- People conduct transactions using digital currencies like credit cards and debit cards, which must be secured by cyber security.
- One of the main problems preventing consumers from choosing digital banking services is the risk of sharing private information and the fear of identity theft.
- Tough Competition.
- Instability of Global economic.
- Ineffective regulations.
- Lack of Customer Loyalty.

7.3 Conclusion

Private Banks in Bangladesh have significantly increased the use of digital banking and elevated client expectations for quick, individualized service. Many people who stay at home or office are switching to digital channels to handle most of their financial needs. Traditional bank branch visits and in-person interactions with bank employees have decreased as a result. Accepting digitalization in banking is now a requirement, not an option. In actuality, digitalization is already beginning to impact the banking industry's future. A digital race has started in the banking industry as a result of evolving customer behavior, rising customer expectations, and the digitalization of business and society. Banks now understand that investing in digital technologies is the best course of action for improving customer service.

Not all consumers will have access to completely digital banking in the future. All the Online Banking Users are Educated. Illiterate people are not interested in Online Banking. They want traditional Banking. Large number of amount of people are not educated. So it's quite challenging to adopt Online banking to all the people. But the ongoing modern era enables us to successfully achieve digital transformation across business segments by using technical capabilities.

CHAPTER 8

CONCLUSION

8.1 Conclusion

Bangladeshi banks offer very good opportunities to their clients and sustain excellent client relationships. They strive to support their customers by offering simple transactions and sophisticated banking amenities. E-banking makes doing business better anywhere, at any time. E-banking has benefits for banks as well as customers, in addition to both. Customers can access their accounts, make withdrawals, and deposit money without going to a bank.

Information technology's widespread adoption has changed the banking industry's structure. E-banking benefits both clients and banks by being more accessible, practical, secure, quick, and economical. Customer requirements Innovations that make tasks easier, quicker, and more efficient enable banks to compete for clients by offering better services and utilizing cutting-edge technology. Online Banking saves customer travel cost and time.

According to this study, customer satisfaction with Internet banking is correlated with privacy, security, fund transfers, anytime, anywhere use, e-statements, cash carry, convenience, and online bill pay. Internet banking providers has to work harder to enhance those aspects in order to satisfy customers. Even while there is room for improvement in terms of fund transfers, online bill pay, Security, transaction costs, and user friendliness, previous studies have shown that these factors are crucial for ensuring that customers are satisfied with Internet banking. This study can help online banking service providers understand the viewpoints of users and identify problems from their point of view. It can make it simple for Internet banking companies to satisfy customers.

8.2 Further Suggested Work

Several suggestions are available to help overcome this research. By extending the time range of a research project in the future, the issue of time restrictions can be resolved. It may provide researchers more time to interview more respondents for data and distribute more questionnaires

to working adults. Simple online transactions are possible. Enhancing online banking security could result in more customers transacting online.

Additionally, the research's sample size needs to be expanded because it could have an impact on the study's correctness and dependability. The dependability between independent variables and the dependent variable can be enhanced with a larger sample size. A larger sample size should be used to confirm the reliability and generalizability of the research findings as two hypotheses had been disproved. A larger sample size can aid researchers in selecting more working individuals who are employed across Bangladesh. So, it is possible to generalize and accurately represent respondents' opinions. Additionally, a questionnaire's appropriate content is crucial because it will have an impact on the significance of both the independent and dependent variables. These are a few of the research's limitations, however they can be overcome by following the above-mentioned advice. Future study can produce an accurate and trustworthy outcome after the restrictions are resolved.

REFERENCES

- [1] Al Kabir, A. and Poddar, S.C., 2015. E-Banking and Customer satisfaction in Bangladesh. *European Journal of Business and Management*, 7(8), pp.48-54.
- [2] Ramya, M., A STUDY ON CUSTOMERS SATISFACTION TOWARDS ONLINE BANKING TRANSACTIONAL SERVICE WITH SPECIAL REFERENCE TO COIMBATORE CITY.
- [3] Amir, M.K. and Sheykh, D.H., 2017. Analysis of Customer Satisfaction on Online Banking: A Case Study on “One Bank Limited”.
- [4] Ling, G.M., Fern, Y.S., Boon, L.K. and Huat, T.S., 2016. Understanding customer satisfaction of internet banking: A case study in Malacca.
- [5] Siddika, A. and Sarker, B., 2019. Customers’ satisfaction with internet banking: Evidence from Bangladesh.
- [6] Renu, D.P. and Singh, K., 2019. The Impact of E-Banking on the use of Banking Services and Customers Satisfaction. *International Journal of Trend in Scientific Research and Development*, 3(4), pp.20-23.
- [7] Ali Karam, A. and Sleimi, M., 2018. The Impact of E-Banking Services Quality on Customers Satisfaction Moderated by Customer Trust: Survey on Arab Bank in Amman, Jordan.
- [8] CHERUKUR, M.R.B. and RUBY, M.S., 2020. Study on electronic banking towards customer satisfaction. *Journal of Contemporary Issues in Business and Government* | Vol, 26(2), p.938.
- [9] Shompa, F. and Islam, Z., 2015. Customer Satisfaction of Online Banking Services: A Case Study On Islamic Banks In Bangladeshl. *Bangladesh Research Journal*, 15.
- [10] Baskar, S. and Ramesh, M., 2010. Linkage between online banking service quality and customers. *Perspectives of Innovations, Economics, and Business*, 6(1231-2016-100709), pp.45-51.
- [11] Unyathanakorn, K. and Rompho, N., 2014. Factors affecting customer satisfaction in online banking service. *Journal of Marketing Development and Competitiveness*, 8(2), p.50.
- [12] Alsudairi, M.A., 2012. E-service quality strategy: Achieving customer satisfaction in online banking. *Journal of Theoretical and Applied Information Technology*, 38(1), pp.6-24.
- [13] Naveed, R.T., Irfan, M., Aslam, H.D., Anwar, B. and Ayub, A., 2019. The Effect Of General Banking Information Technology System On Customers’ satisfaction With The Moderating Effect Of Customer Trust: An Empirical Study From Pakistani Commercial (Islamic) Banks.
- [14] Sadozai, A.M., Saleem, A., Chuanmin, S., Ali, M.R. and Marri, M.Y.K., 2017. Factors affecting customers’ satisfaction in online banking: empirical evidence from developing countries. *International Journal of Advanced Biotechnology and Research*, 8(2), pp.96-104.
- [15] Ankit, S., 2011. Factors influencing online banking customer satisfaction and their importance in improving overall retention levels: An Indian banking perspective. In *Information and knowledge management* (Vol. 1, No. 1, pp. 45-54).
- [16] Sakhaei, S.F., Afshari, A. and Esmaili, E., 2014. The impact of service quality on customer satisfaction in Internet banking. *Journal of mathematics and computer science*, 9(1), pp.33-40.
- [17] Firdous, S. and Farooqi, R., 2017. Impact of internet banking service quality on customer satisfaction. *The Journal of Internet Banking and Commerce*, 22(1), pp.1-17.

- [18] Islam, R., Ahmed, S., Rahman, M. and Al Asheq, A., 2020. Determinants of service quality and its effect on customer satisfaction and loyalty: an empirical study of private banking sector. *The TQM Journal*.
- [19] Jahan, N. and Shahria, G., 2021. Factors effecting customer satisfaction of mobile banking in Bangladesh: a study on young users' perspective. *South Asian Journal of Marketing*.
- [20] <https://www.tbsnews.net/economy/banking/only-3-internet-users-are-internet-banking-customers-244042>, 15-08-2022.
- [21] <https://gigatechLtd.com/2021/09/07/rise-of-online-banking-in-bangladesh>, 15-08-2022.
- [22] Al-Hawary, S.I.S. and Al-Smeran, W.F., 2016. Impact of electronic service quality on customers satisfaction of Islamic banks in Jordan. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 7(1), pp.170-188.
- [23] Isibor, A.A., Omankhanlen, A.E., Okoye, L.U., Achugamonu, B.U., Adebayo, M.E., Afolabi, G.T. and Ayodeji, O.E., 2018. Impact of electronic banking technology on customers satisfaction and economic growth in Nigeria. *International Journal of Civil Engineering and Technology*, 9(12), pp.536-544.

APPENDIX

Appendix: Table A1. Correlation Matrix between items

	<i>Factor 1</i>	<i>Factor 2</i>	<i>Factor 3</i>	<i>Factor 4</i>	<i>Factor 5</i>	<i>Factor 6</i>	<i>Factor 7</i>	<i>Factor 8</i>	<i>Factor 9</i>	<i>Factor 10</i>	<i>Factor 11</i>	<i>Factor 12</i>	<i>Factor 13</i>
Factor 1	1.00												
Factor 2	0.97	1.00											
Factor 3	0.96	1.00	1.00										
Factor 4	0.98	0.99	1.00	1.00									
Factor 5	0.98	0.98	0.97	0.98	1.00								
Factor 6	0.96	0.97	0.98	0.99	0.97	1.00							
Factor 7	0.95	0.87	0.85	0.88	0.93	0.87	1.00						
Factor 8	0.97	0.96	0.96	0.98	0.96	0.99	0.90	1.00					
Factor 9	0.99	0.94	0.93	0.96	0.98	0.96	0.98	0.97	1.00				
Factor 10	0.95	0.95	0.96	0.98	0.93	0.99	0.84	0.99	0.94	1.00			
Factor 11	0.92	0.95	0.96	0.97	0.94	0.99	0.81	0.98	0.91	0.98	1.00		
Factor 12	0.99	0.99	0.98	0.99	0.99	0.96	0.93	0.96	0.97	0.94	0.93	1.00	
Factor 13	0.98	0.94	0.93	0.93	0.95	0.90	0.95	0.91	0.96	0.88	0.84	0.98	1.00

Note: Factor1: Safety; Factor2: Easy to Update Information; Factor3: Privacy & Security; Factor4: Save Time & Energy; Factor5: User Friendly; Factor6: Anytime anywhere use; Factor7: Reduce Transaction Cost; Factor8: Free from cash carry; Factor9: E-Statement; Factor10: Online Bill Pay; Factor11: Fund Transfer; Factor12: Easy and Convenience to use; Factor13: Overall Satisfaction.

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