T.C.
ANKARA YILDIRIM BEYAZIT UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES

THE IMPACT OF E-BANKING SERVICES ON CUSTOMER SATISFACTION IN COMMERCIAL BANKS OF SOMALIA

MASTER'S THESIS

Fadumo Abdullahi AHMED

DEPARTMENT OF MANAGEMENT INFORMATION SYSTEMS

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APPROVAL PAGE

Thesis entitled “the impact of e-banking services on customer satisfaction in commercial banks of Somalia” prepared by Fadumo Abdullahi Ahmed was accepted by the following jury as a Master thesis in the Department of Management Information Systems of the Institute of Social Sciences of Ankara Yıldırım Beyazıt University by unanimity / majority of votes.

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PLAGIARISM

I declare here that all information in this thesis is my own original work. I have clearly referenced in accordance to Ankara Yildirim Beyazit University guidelines as well as with the academic rules and ethical conduct. Lastly, I accept all legal responsibility related to my thesis's academic procedure.

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ÖZET

Somali Ticari Bankalarında E-Bankacılık Hizmetlerinin Müşteri Memnuniyeti Üzerine Etkisi

Son yıllarda bankacılık sektörü kavramı, müşteriye değer vermek için verimli ve makul bir düzen olarak çevrimiçi bankacılığın kullanımını hızla geliştirmiştir. Bu nedenle bu çalışma, müşteri, ilgi ve müşteri güveni gibi konulara dikkat çekerek, e-bankacılık hizmet kalitesinin müşteri memnuniyeti üzerindeki etkisini incelemeyi amaçlamaktadır. Ayrıca, çalışma Somali'deki bankalardaki müşteri memnuniyet seviyesini araştırmayı ve müşteri memnuniyeti üzerinde en fazla etkiye sahip olan boyutlar hakkında sonuçlar çıkarmayı amaçlamaktadır. Banka Somali'de e-bankacılık hizmetinin müşteri memnuniyeti üzerindeki etkisini değerlendirmek için nicel araştırma yöntemlerinden anket araştırma deseni kullanılmıştır. Veriler Somali'deki bir üniversitede elektronik bankacılık kullanan ve elverişli örnekleme yöntemi ile seçilmiş 348 katılımcıdan toplanmıştır. Bulgular, e-bankacılık hizmetinin hala müşterinin memnuniyetini karşılamadığını ortaya koydu. Çalışma ayrıca, E-bankacılık hizmet kalitesinin dört ölçümünün (verimlilik ve kullanım kolaylığı, güvenilirlik, güvence ve empati ve yanıt verme ve iletişim) müşteri memnuniyeti üzerinde önemli bir etkiye sahip olduğunu, en etkili boyutların ise verimlilik ve kullanım kolaylığı, güvenilirlik olduğunu ortaya koymaktadır. İleride yapılacak çalışmalarda Somali'deki başka örneklemleden veri toplanarak çalışma tekrarlanmalıdır.

Anahtar Kelimeler: E-bankacılık, hizmet kalitesi boyutları modeli ve müşteri memnuniyeti.

ABSTRACT

The Impact of E-Banking Services on Customer Satisfaction in Commercial Banks of Somalia

Over the last years, the concept of banking industry has rapidly built up the use of online banking as an efficient and reasonable set-up to value the client. Thus, this study aims to examine the impact of e-banking service quality effects over customer satisfaction, by giving attention issues such as customer, care, and customer trust. Additionally, the article aims to explore the level of customer satisfaction in selected banks in Somalia and draws conclusion on dimensions that have the most impact on customer satisfaction. In order to assess the impact of e-banking service on customer satisfaction in banks of Somalia, the survey design, one of the quantitative research method, was used. Data that were gathered through the questionnaire from 348 participants completing the questionnaire. The findings revealed that the e-banking Internet service does not fulfill client's satisfaction. The study also reveals that the five measurements (efficiency and ease use, reliability, security and privacy, and responsiveness and communication) of E-banking service quality have a significant impact on customer satisfaction while the most effective dimensions are efficiency and ease use, reliability, security, and privacy. Further research should be conducted with different samples in Somalia.

Keywords: E-banking, service quality dimensions model and customer satisfaction.

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1. INTRODUCTION

1.1. Background Of The Study

Service quality has become a common metric for evaluating the success of numerous service organizations, including banks. The extensive use of the Internet in the service sector presented some difficulties for service quality researchers. Various models of online service efficiency have been suggested by various scholars from time to time. Internet banking is one of the rising services that must improve online service quality to increase customer loyalty and retention. Internet banking is defined by [1] as a kind of bank transaction where people make deposits, make account balance inquiries, pay bills, and monitor assets such as online stocks. Online banking is useful for bank customers and it has some drawbacks, too.

Around the same time, the digital era has introduced new opportunities in terms of access to and dissemination of information, raising new obstacles in protecting confidential information from intruders while making it available to others. As a result of technical improvement, increased knowledge, and expectations for banks to support their customers online, today's business climate is highly competitive and is experiencing rapid change. Banks have traditionally been at the forefront of technical adaptation to improve their goods and services; [1]. The banking industry of the 21st century exists in a complex and demanding environment characterized by evolving conditions and a highly unpredictable economic situation.

Today, Information and Communication Technology (ICT) is at the forefront of this global transition in electronic banking structures in Africa [2]. Asserting that they have been using electronic and telecommunication networks over time to offer a wide variety of value-added goods and services, knowledge technologies should not be overlooked by managers in the banking sector in Rwanda. Since they play a vital role in the modern banking structure, they find out that most affluent banks' whole cash flow is connected to the information system. The application of the principles, methods, policies and delivery strategies of information and communication technology to banking services has become a matter of profound significance and interest for all banks and, indeed, a necessity for local and global competitiveness.

A variety of studies have been undertaken on problems in the broader sense of e-banking [2, 3]in particular on the logic and advantages of internet banking, consumer satisfaction, and quality service.

Consumer satisfaction is a growing field of consumer research. For decades, most studies aiming at understanding human behavior have implicitly included the concept of satisfaction, even if it isn't officially stated. Satisfaction has been labeled as a foundation of human existence, such as wants, desires, and so on, and it has also been labeled as a goal from now to an eventual future condition of human needs, such as happiness, pleasure, fulfillment, and so on. In the evolution of modern marketing philosophy, customer satisfaction is also critical. It was utilized as a marketing objective for satisfying customer requirements and desires. Consumer satisfaction has always been defined as a tool for marketers to attain their corporate goals in all fundamental marketing literature. However, ten years later, in 1976, there was a resurgence of interest in contentment. The satisfaction construct has caught the interest of many researchers who want to learn more about it [4].

1.2. Problem Statement

Assuming a good service is the main issue for all businesses extremely for the banking industry. Customer satisfaction might identify the success or failure of a business. In order competitive in a marketplace, banks have to satisfy their customer. The highest service quality has provided would ensure a high market share and an essential return. The increasing numbers of commercial banks in Somalia especially Mogadishu city have led to the creation of a challenging and competitive environment where each bank is ready to have enough shares in the market. So that the banks need to understand the attributes that a customer used to judge a service quality and enhance service quality. This research tries to investigate the customer perception towards online service quality of commercial banks in Somalia.

1.3. Purpose Statement

The purpose of this study is to describe the effect of the E-banking service quality on customer satisfaction and determine customer perception towards internet service quality of commercial banks in Somalia.

1.4. Research Questions

The following research questions will be investigated in the study.

- What is the effect of the E-bank service quality on customer satisfaction?
- How much do service quality dimensions (Efficiency and ease use, reliability, responsiveness, and assurance, and empathy) explain customer satisfaction?
- What is the level of customer satisfaction towards commercial banking online?

1.5. Significance of The Study

The study's findings have been very important to managers of commercial banks in Somalia, so they have considering the impact of electronic banking on their banks' performance as well as consumer concerns. This would go a long way toward assisting the bank in meeting its specified goals and, in the long term, increasing shareholder capital.

1.6 Scope of The Study

Scope of this study were focusing on only the effect of E- bank service quality on customer satisfaction of students and professionals live in Mogadishu Somalia, how do they satisfy the service of E-bank quality among students and professionals, knowledge and attitude are two factors was study in this research.

1.7. Hypothesis

H1: Efficiency and ease of use has a positive impact on customer satisfaction

H2: Reliability has positively affected the customer satisfaction

H3: Responsiveness directly influenced the customer satisfaction

H4: Assurance and empathy positively affect the customer satisfaction

1.8. Operational Definition of Key Terms Electronic Banking;

This refers to the bank's distribution of services to consumers using several delivery platforms that may be utilized with various terminal devices such as a personal computer and a mobile phone with browser or desktop software, telephone, or digital television.

Customer satisfaction; This was an assessment of the perceived gap between prior expectations and the actual performance of the product or service.

E-service quality was a sector in which it is possible to provided users with efficient and effective services using electronic media.

2. LITERATURE REVIEW

The focus of this chapter has to provide a selective review of the past research works related to the present study. A short review of the literature on electronic banking briefly illustrates the major issues that researchers and practitioners have dealt with in recent years.

2.1. E-banking

Electronic banking is a modern way to conduct business without being outsourced. It is described as the automated transfer of products and services from conventional banks to customers sent directly to the employee's device. When electronic banking is first implemented, mediation is used as a supplier of products and services as banks, but markets, with the advancement of digital age banks, use media and informative online banking transactions. Internet banking is one of the many distribution banks which have been used for over 20 years by banks. Some of the most used channel banks are mobile banking, credit card, and electronic retail stores to pay with the use of the Automatic Teller Machine Tool shop (ATM).

UK online banks have experienced an increase in demand for cross-border cash transfers, including low rates, according to [5]. Banks in the United Kingdom continue to grow and launch new online banking platforms to attract their clients. By June 1999, the UK and eight European countries, such as France, Portugal, Germany, Spain, Switzerland, Luxembourg, the Netherlands, and Scandinavia, became the first providers of online banking. The marketplace in Sweden and Finland leads the world in efficiency and online services. The Scandinavian EaskildaBanken (SEB) was Sweden's first online bank in December 1996.

Though China Merchant Bank was the first to introduce online banking and telephone banking services, China Bank was given the green light for online banking in 1996. The new online bank provides access to transactions for 24 hours. With 3 by the end of 2002. 5 million Renminbi (RMB) shares, customers opened an online bank account with revenues of more than RMB 5 trillion in China's largest commercial bank. The number of users using online banking was 10 million in 2004. Online banking grew steadily to such a degree that it accounted for roughly 245 in 2007. RMB 5 trillion in trades in China.

The "wealth" and "sound presence" of e-banking would impact the capacity of banks to establish a trusted relationship between their clients and employees. On the other hand, e-banking would be an enticing option for those consumers whose partnerships are mainly focused on service inefficiency. Some other hypotheses may clarify the pace of adoption and degree of acceptance of internet banking relevant to customer behavior. Interestingly, [3]have argued that site design and layout product details are also essential considerations that influence consumer loyalty. [4], have concluded that protection has been generally accepted as one of the key challenges to internet acceptance, based on internet access availability and surprisingly on a variety of other social and psychological considerations. Bank-corporate customer relationships remain a key issue in the banking industry as companies are committed to maintaining a higher competitive advantage in the market [6]The most important factor in the success of new financial services is the relationship between banks and corporate customers [7]. Internal organizational elements such as creative culture, technological preparation for the staff of corporate customers, and top management support for the industry were eventually used to explore the relationship to address issues relating to resource shortages within SMEs. Finally, few longitudinal studies have explored the effect of internationalization and corporate e-banking on corporate efficiency [8].

In 1996, a South African bank begins using the internet. Customers are responding because it is convenient, safe, and inexpensive. The first bank to operate an internet bank was Amalgamated Bank of South Africa (ABSA), followed by Ned Bank. According to Karin (2000), 672,000 customers connect to a bank or online. ABSA provides free internet access to encourage customers to use online banking. Consumer acceptance and ease of use, on the other hand, are comparable to other countries such as the United Kingdom, and internet access reaches approximately 3.5 million users.

The rise of online banking technologies such as e-banking in Somalia has resulted in changes in financial services, and banking services are now available to customers in Somalia [9, 10]. This is due to banks' facilitation of the use of online banking facilities such as ATMs, computers, and so on for money transfers.

Following the collapse of the Somali government in 1991, under former President Siyad Barre's leadership, the financial system has undergone several reforms, particularly in

Central Banks and the entire Somali banking system ([11]As a result, by the end of 2006, the central bank had managed to reopen its offices in Mogadishu and other major cities. Following that, the Money Transfer Companies, also known as the "Hawaleh System," were established to provide some basic banking services, such as e-banking. The Hawaleh System has offices all over the world, which helped it become a well-known budgetary player in Somalia, combined with the quicker and lower service charges they provided, and thus expanded open trust and dependability [12]Furthermore, the Hawaleh system's primary function is to transfer money between foreign countries and within the country. However, now some Mogadishu commercial banks are providing master cards and visa cards that can help Somalians around the world to conduct their e-bank transactions at any time if mobile or laptops are available.

2.2. Customer Satisfaction

Customer satisfaction is defined as the customer's reaction to a clear disparity between previous goals or experiences and the actual performance of the products or services consumed [13]. The term customer service (CS) is very popular these days and is used in all industries to measure service, customer loyalty, and customer engagement. The majority of the discussion on the topic of CS revolves around customers' perceptions of their service, how the service is delivered, and whether or not their expectations are met. It goes without saying that if consumers' needs are met, the report will be positive, but if they are not, the report will be negative. The continuous provision of high-quality service to meet their customers' needs is the key predictor of long-term success in the intensely competitive banking sector [14]. According to [5], a stable interest rate is an important problem in consumer loyalty in the banking industry, and competition and relaxation are two crucial aspects of customer satisfaction.

“Satisfaction, according to [6] is largely focused on feelings rather than logic. He describes happiness as "the fulfillment reaction of the customer." Its expression is determined by whether the customer has met the sale provider's after-service assessment and whether the customer has reached their delivery stage. [7], on the other hand, use the following seven components to assess service and satisfaction: attraction, enjoyment, surprise, indignation, wise decision-making, and doing the right thing. Since CS is primarily focused on emotions, as [15] previously said, it is common for each person to perceive

emotions differently and thus evaluate CS in different ways. The person delivering or receiving the service, the product being sold, and the appraisal of how the bank's goods and services reach or exceed their requirements all play a part in the degree of satisfaction or disappointment. Satisfaction is associated with a variety of psychological and physical symptoms. Similarly, researchers like [16] discovered a close and important connection between CS and the standard of banking services. Bu-Mu'amar has agreed that regardless of the brand that depends heavily on their service quality choices, the customer can continue to work with and stay faithful to the bank.

2.3. Electronic Service Quality

E-services (electronic services) are information and communication technology-based services (ICTs). The three major elements of e-services are the service provider, the service receiver, and the service delivery network (i.e., technology). E-service (or service) is a broad term that generally refers to "the distribution of services over the Internet" (the prefix "e" stands for "electronic" in many other contexts). It may also apply to e-Commerce, as well as non-commercial services (online), which are usually offered by the government [17].

Businesses that have been effective in providing e-services are beginning to recognize that, in addition to having a website and charging a low price, the quality of the electronic service is an important success or failure factor [18, 19]. One of the reasons for the growing value of e-services efficiency is that consumers can compare different service providers even more easily over the Internet than they can across conventional networks [20]. As a result, users of internet platforms demand the same or higher degree of service efficiency as customers of conventional providers [20].

[21] investigated the major factors of the quality of Internet banking services. They content-analyzed customer stories of significant occurrences in Internet banking. They identified seventeen service quality dimensions in internet banking. These are reliability, responsiveness, competence, courtesy, credibility, access, communication, customer comprehension, cooperation, continuous improvement, content, correctness, ease of use, timeliness, aesthetics, security, and a variety of features. They proposed that several characteristics, such as responsiveness, reliability, and availability, are important for both traditional and Internet banks. They selected seventeen criteria that would be classified into

three groups: customer service quality, online system quality, and financial service product quality. They also discovered that there are no significant variations in the frequency of references to the 17 dimensions between Internet-only banks and traditional banks offering Internet banking services. The most commonly stated aspects, as the primary sources of pleasure or discontent, were reliability, responsiveness, accessibility, and correctness.

[22] developed a modified version of the SERVQUAL instrument for online banking, and their study recommended a four-factor model of online banking based on exploratory and confirmatory correlational analysis SERVQUAL including Tangibles, Reliability, responsiveness, and Empathy. Data for model testing were obtained through a web survey. With the assistance of 1 of the foremost commercial banks in Korea, a survey was administered via the bank's website. Furthermore, they explored the relationships among customer satisfaction, customer retention, and service quality.

[8] To evaluate websites, the ZPM E-Service Quality Model was utilized as the foundation. They generalized elements that impact consumers' quality satisfaction with services and distributed a questionnaire survey to Internet bank users, administrators, and workers. The evidence-based analysis resulted in the creation of a service quality table that evaluates Internet banks. Researchers also confirmed that there is a large knowledge gap, design gap, and fulfillment gap. The findings showed eight dimensions: "efficiency," "reliability," "privacy," "compensation," "responsiveness," "contact," "feeling of beauty," and "individualization." These are the key factors that influence the service quality of Internet banks.

[9] targeted at assessing the service quality of internet banking (i-banking) services in India from the standpoint of customers Various target groups were given a standardized questionnaire with 44 quality items. Based on the main component factor analysis, seven quality characteristics were identified: reliability, accessibility, user-friendliness, privacy/security, efficiency, responsiveness, and fulfillment. The authors did a data demographic analysis and discovered that gender is rarely a factor in the usage and rating of i-banking service quality in the majority of cases across various customer groups. Using regression analysis, the authors presented a viable mathematical model for assessing total service quality. Customers are satisfied with the quality of service on four dimensions,

including reliability, accessibility, privacy/security, responsiveness, and fulfillment, but are dissatisfied with the "user-friendliness" component.

2.4. E-banking Services

Banking services delivered over the Internet are known as e-banking services. Banks' Internet services, which used to be exclusive to account checking, have recently expanded to provide a wide range of banking services. It is just not uncommon nowadays for almost all services available in the branch or over the phone to be available on the Internet as well. Banks can also provide not only “branch-based” services over the Internet, but also new added-value services that are only accessible online, such as electronic commerce, real-time brokerage, financial details menus, e-mail updates, and third-party services (tax collection, portals, or bill management) [23]

The number of people who use online banking services continues to rise. In the United Kingdom, online banking use grew during the study period, with 30% of respondents saying they had accessed their bank account online during the previous three months. As of 2020, 76 percent of people used online banking daily, indicating steady growth in this operation sector. The mobile was the most used device for online banking. In recent years, additional digital banking developments have entered online banking solutions: new development is noted in the fields of mobile banking, mobile banking applications, digital wallets, and Fintech solutions aimed at individual customers. [24].

Figure 2.1. below, present in a report of Office for National Statistics (UK). Shared number of people using internet banking in Great Britain 2007 to 2020.

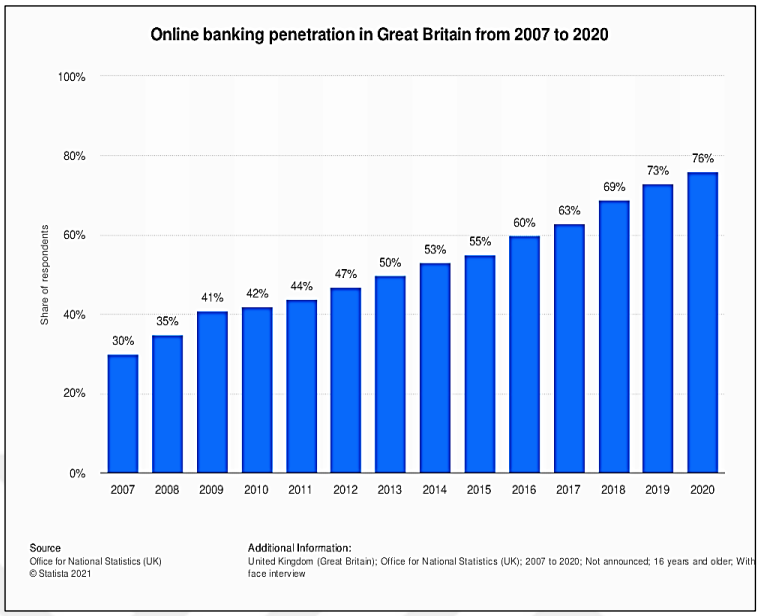


Figure 2.1. Number of people using online banking in the UK from 2007 to 2020

In simple terms, e-banking is a banking arrangement in which a customer may conduct numerous transactions over the internet that are end-to-end encrypted, meaning they are safe and secure. Paperless/cashless transactions are encouraged by e-banking. It also comes with a set of rights, duties, and costs. E-banking encompasses a wide range of services, including:

2.4.1. ATM Banking Services (Automated Teller Machine)

ATM is one of the most widespread and basic e-banking services. It is not only a machine from which you may take cash as needed, but it also allows you to check your account status, transfer funds, deposit funds, update your mobile number, and alter your Debit Card PIN. Customers are recognized at most contemporary ATMs by inserting a plastic ATM card with a mag stripe or a plastic smart card with a chip that includes a unique card number as well as security information such as an expiration date or CVV, among other factors. The customer authenticates himself by supplying a personal identification number (PIN). Customers can use an ATM to access their bank accounts and make cash withdrawals, credit card cash advances, check account balances, and buy prepaid cell phone credit [25].

According to [25] Automated Teller Machines are available 24 hours a day and can be found in a variety of locations, particularly in densely populated areas. Customers can use an ATM with an ATM card and a personal PIN to have secure 24-hour access to banking services including deposits, withdrawals, transfers, account balance queries, requests for checkbooks, account statements, and direct deposits, among other things. Electronic communication tools are becoming increasingly popular. Customers like these because they are more convenient, quicker, and frequently less expensive. Banking experience demonstrates that based on different segments, clients, and types of operations, goods, and situations, it is appropriate to utilize a variety of communication methods. Electronic banking is a type of service that makes use of electronic communication. Telephone connections, personal computers, payment methods (bank cards), and self-service zones are all examples of electronic banking. Electronic banking is available in a variety of formats [25].

The banking sector cannot deliver efficient services to customers without the use of technology. A new or significantly improved service idea that is put into reality is effective service delivery [26]. Expectations of customers about service encounter experiences and service delivery methods, as well as the overall notion of what constitutes great service, are thus critical concerns that must be examined before any structural change is implemented. A service product or service process that is based on technology or a systematic technique is known as effective service delivery. It might be a new consumer contact channel, a distribution system, a technology notion, or a mix of these things [27]. The efficiency with which services are delivered has a direct impact on total customer satisfaction. Customer satisfaction is positively connected to effective service delivery in that the more a customer believes that the delivery method of the transactions that the bank is intended to give is very excellent, the happier they will be with the bank's services [28].

2.4.2. Mobile Banking Services

Almost all banks have developed mobile applications that allow you to conduct transactions at the touch of a button. A smartphone, internet, mobile application, and mobile banking service activated in your bank account are all necessary. The mobile banking application interacts with the bank's servers to deliver financial services to a user's mobile device [29]. As a result, the application must have the ACID characteristics of a system.

Atomicity, Consistency, Isolation, and Durability are the letters that make up this acronym. These features are essential for any computer system to work properly and deliver high levels of service to consumers. A certain transaction is made using the mobile banking app should be identical to those made in person at the bank. This is crucial for maintaining consistency [30].

As a result, all transactions carried out by the application must be atomic. This indicates that a transaction is either completed in its entirety or does not occur at all. Atomicity is critical for maintaining the integrity of the entire system. Typically, the application will connect with the bank's databases. Atomicity should provide users confidence that when they use the app, their transactions will be completed completely. Consistency is the second key quality for the application to have. Consistency in this sense indicates that each transaction should move the system from one legitimate state to another [31].

When looking for a good mobile application, customers would evaluate the application's simplicity and flexibility. Customers are more likely to be happy with an app that automatically provides them information on their accounts and financial achievements. The application's ability to receive updates and a user-friendly interface are other important factors to consider [32]. Customers will mostly choose an application with a configurable user interface, which allows them to modify the design of the interface, add or remove navigations and tabs from a list of pre-defined choices [33].

According to the research [34], software companies have developed technologies that can assist mobile app developers in implementing these functionalities. It will help them achieve an edge effect that assures customer satisfaction and a unique experience while using their mobile applications if it is correctly acknowledged and used in application design [35]. Furthermore, all mobile applications, according to the study [36], will be reliant on network technology and physical infrastructure. Therefore, it's important to consider hardware when it comes to security. For example, a company's mobile banking application may have been implemented five years ago. Innovations in software technology have resulted in more secure applications and systems throughout this time. However, on modern hardware that supports the technology, they are most effective. Many servers nowadays, for example, would be incapable of running obsolete and unsafe server software from the 1990s. If a

company still has physical equipment from this period, it should be modernized to provide ongoing support. security, the planning of the mobile application, and also the supporting system is additionally critical [33].

Technologically proficient customers are more likely to seek out mobile banking services more useful, and so develop a positive attitude towards them [37]. However, customers who have a controversy in using modern-technology laced devices and gadgets are likely to seek out mobile applications and wireless interfaces involving and difficult to use. High customer satisfaction may therefore be correlated to positive customer attitudes. As a consequence, it is acceptable to assume that mobile banking service providers that maintain a positive attitude among their consumers are more likely to retain their customers as a result of customer satisfaction [38].

Mobile-banking service providers can cultivate a positive attitude within their customers by providing applications that enable easy navigation, are easy to use, and have an appealing design [39]. The designing of mobile applications and user interfaces could form the idea for cultivating such a positive attitude. As mentioned, the designing of mobile banking applications may be finished with an insight from the amount of computer literacy skills exhibited by the target population. this implies creating platforms, navigations, and navigation tabs that are both appealing and simple to spot and use. just like the case of M-Pesa in Kenya, the banking service has been ready to launch a thriving business that relies on banking technology while a majority of users have poor computer literacy skills. The success of the service has for example been founded on the pliability provided by the in-built M-Pesa application that secures users from wrong transactions and fraud [40].

2.4.3. Telephone Banking

Telephone Banking (Telebanking) is a type of remote or virtual banking that is essentially the delivery of branch financial services via telecommunication devices where bank customers can perform retail banking transactions by calling a touch-tone telephone or mobile communication device linked to the bank's automated system using Automated Voice Response (AVR) technology [41]. Mobile money services like M-Pesa, Tigo Pesa, EzyPesa, Halo Pesa, Sahal, EVC Plus, Zaat, and Airtel Money are notable examples of this type. According to the findings of this study, telephone banking may be described as an e-

banking transaction that can be completed by anybody, at any time of day or night, using his or her mobile phone.

2.5. Customer satisfaction and service quality

Customer satisfaction and service quality are unquestionably the two main principles at the heart of marketing philosophy and practice [42]. “Customer satisfaction is a cumulative result of interpretation, observation, and psychological responses to the consumption experience of a product/service,” according to the definition [43]. Centered on five dimensions of e-service efficiency: services, ease of use, reliability, and service offerings, researchers discovered a beneficial association between online quality service and customer loyalty. [19]

2.6. E-banking Variables

2.6.1. Efficiency and Ease of Use

Efficiency and ease of use: The ease of use is a major factor in which customers enjoy internet banking (Beer, 2006). According to the consumer, one of the three most significant criteria for adopting an innovative product or service is ease of use [44].

2.6.2. Reliability

The willingness to consistently and reliably deliver the advertised service. This refers to the ability to deliver a service that meets consumer expectations in terms of speed (how quickly the transaction is completed), consistency (how accurate the transaction is in terms of money withdrawn), and whether the equipment is available 24 hours a day, seven days a week as scheduled.

Customers also expressed concern about the reliability of e-banking operations in state-owned banks. Owing to poor communications, e-banking is often unavailable, resulting in long lines. When e-banking runs out of cash, particularly towards the end of the month when a large number of civil servants want to access their accounts, the slow response time

by service providers in fixing broken e-banking results in unreliable service. In other cases, though, e-banking meets or exceeds standards.

2.6.3. Security

Security assurance refers to the degree to which a website ensures the security of consumers' financial and personal information, a field that has seen a surge in research interest [45]. By including a privacy policy and information about the protection of the shopping mechanisms, as well as showing the logos of trusted third parties, security can be ensured. Displaying a trustworthy third-party logo, for example, ensures a certain degree of security protection and has been shown to have a huge impact on how customers perceive e vendors' trustworthiness.

2.6.4. Responsiveness

Willingness to assist consumers to provide fast support. Customers may receive assistance when they file E-banking grievances, such as accounts being debited when money is not being dispensed, cards being caught underpayment, a shortage of some currency currencies, no receipts being given, and cases where e-banking is out of operation for hours or even days. Customers believe the service falls short of their expectations, so this is another place where the focus is needed.

2.7. Theoretical framework

The relationship between service quality variables and customer satisfaction can be seen in figure 2.2 below, based on the restricted reach of the literature review described above. This study used Service Quality Model. ERVQUAL Model is a multi-dimensional research process intended to measure the gap scores between expected and perceptions of service quality of the customers based on four dimensions. This concept was created and executed by three American marketing scholars: A Parsu Parasuraman, Valarie A. Zeithaml, and Leonard L Berry.

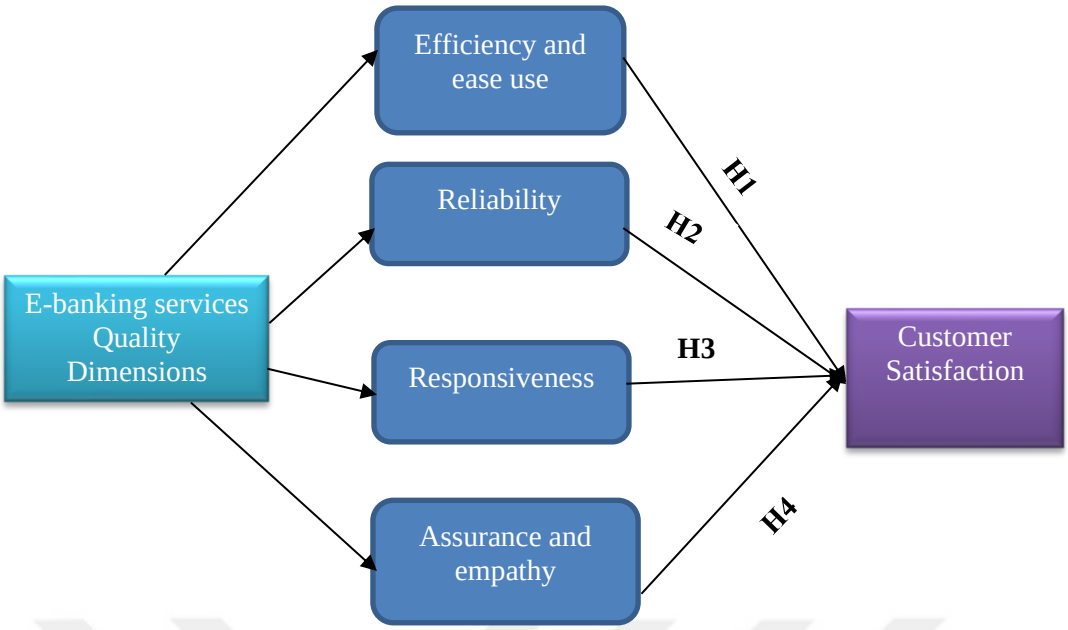


Figure 2.2. The theoretical framework of the this study

3. METHODOLOGY

3.1. Research Design

The study design was a survey research design study method to assess the effect of the E-bank service quality on customer satisfaction in Mogadishu Somalia. According to Creswell (2012) survey is used to describe or determine individual opinions about issues, attitudes, and beliefs. That is why a cross-sectional survey design was chosen in the study to find out e-banking services quality dimensions that have an impact on customer satisfaction.

3.2. Study Population

The target population of this study is employees (Academic & Non-academic) and students use E-banking service in SIMAD UNIVERSITY in Somalia. the researchers will avoid errors or biases in the findings that could result from the respondents' misunderstanding of the questionnaire. Data samples from this research were collected from students and professionals in Mogadishu Somalia.

3.3. Sampling Procedure

The study carried out using the convenience sampling by taking samples that are conveniently located.. The target population of this study will be 3657 e-banking service customers, so according to the 95% confidence level and ± 5% margin of error, the recommended sample size for this research is 348. The Sample Size Calculator is presented as a public service of Creative Research Systems survey software. This software was used to calculate the sample size for this formula:

$$ss = \frac{Z^2 * (p) * (1-p)}{c^2}$$

Z = Z value (e.g. 1.96 for 95% confidence level)

p = percentage picking a choice expressed as a decimal

(.5 used for sample size needed)

c = confidence interval expressed as a decimal

3.4. Research Instrument

3.4.1. Data Collection Procedure

The fundamental instrument that was used for data collection is an online survey. Using a survey questionnaire is popular in business and marketing. The survey instrument was orijinal developed by [10] and adopting the instrument fundamentally used for studies Alawneh, Al-Refai, and Batiha (2013), Asad, Mohajerani, and Nourseresh (2016), Sikdar, Kumar, and Makkad (2015), and Toor, Hunain, Hussain, Ali, and Shahid (2016). Adjusting the factors that influence E-banking service quality to customer satisfaction. The survey was administered to participants online using an electronic Google form and shared via email and also social media like Facebook and WhatsApp. The survey is divided into two sections. Section1 contains 28 questions; the 22 questions of this section are based on the e-banking service quality model (efficiency and ease use: Items 1 through 8, reliability: items 9 through 12, responsiveness: items 13 through 17, security and privacy: items 18 through 22) and 6 questions related the satisfaction on that service. Section2 is demographic questions such as age, gender, level of education, period, and frequency of E-Banking usage.). The questionnaire designed a Liker-type scale with 1 through 5, 1 being strongly agreed and 5 strongly disagree.

3.5. Reliability

Before the data analysis of research questions, the reliability of the data collected from the research questionnaire was checked. To achieve that, a Cronbach alpha coefficient was evaluated for the statistical analysis, including Efficiency Reliability, Responsiveness Security and Privacy, and Satisfaction to-use e-banking service. To interpret the Cronbach's alpha coefficient calculations, George and Mallery's (2016) guidelines were used in which > 0.9 is equivalent to excellent, > 0.8 is equivalent to good, > 0.7 is equivalent to acceptable, > 0.6 is equivalent to questionable, > 0.5 is equivalent to poor, and ≤ 5 is equivalent to unacceptable. Table 3.1 below shows the results of the reliability analysis.

Table 3.1. Reliability statistics

No	Variables	N	N. of Items	Cronbach's Alpha
1	Efficiency	348	8	.875
2	Reliability	348	4	.761
3	Responsiveness	348	5	.815
4	Security	348	5	.827
5	Customer Satisfaction	348	6	.895

3.6. Data Analysis Methods

The data were analyzed using the Statistical Package for Social Sciences (SPSS) version 26. Descriptive statistical analysis was used to analyze data for this study. Frequencies, percentages, mean, and standard deviation were used for the first, second, and third research of this study is a descriptive-analytic technique. Tables and figures were used to present data. Moreover, linear regression was used to analyze how one of the independent variables influences a standard value of a dependent variable. And the following models of regression were used: $Y= a0 + a1\ x1 + a2\ x2 + a3\ x3+ a4\ x4 + e$.

Where:

Y= Customer Satisfaction

x1= Efficiency and ease use

x2= Reliability

x3= Responsiveness.

x4= Assurance and empathy

a0= Constant

a1 & a2: are the coefficients were estimated.

3.7. Ethical considerations

The researcher has informed participants about the objectives of the study and consent to the presence and importance of the study. The rights and use of the data to which they are entitled before the questionnaire is administered. All sources used in these research studies are also respected by citations and references in the APA format. Lastly, the identification and private details of the respondents were kept secret and strictly confidential. All the data collected were used only for the academic purposes indicated in the questionnaire description.

4. FINDINGS

4.1. Demographic Profile of Participants

The demographic profile of this participant is in Table 4.2. Age was the first demographic variable in which 348 participants. The most frequency observed age groups was 16-25 years (n = 182, 52%); 150 or 43.10% of them were 26-35 years, 15 of them were the age 36-45 years (4.31%), 0.29% or 1 of the participants were older than 46. On the other hand, the largest age range had those aged 16-25. Furthermore, The highest ages were found to be between the ages of 16 and 35, which corresponds to the ages of most university students.

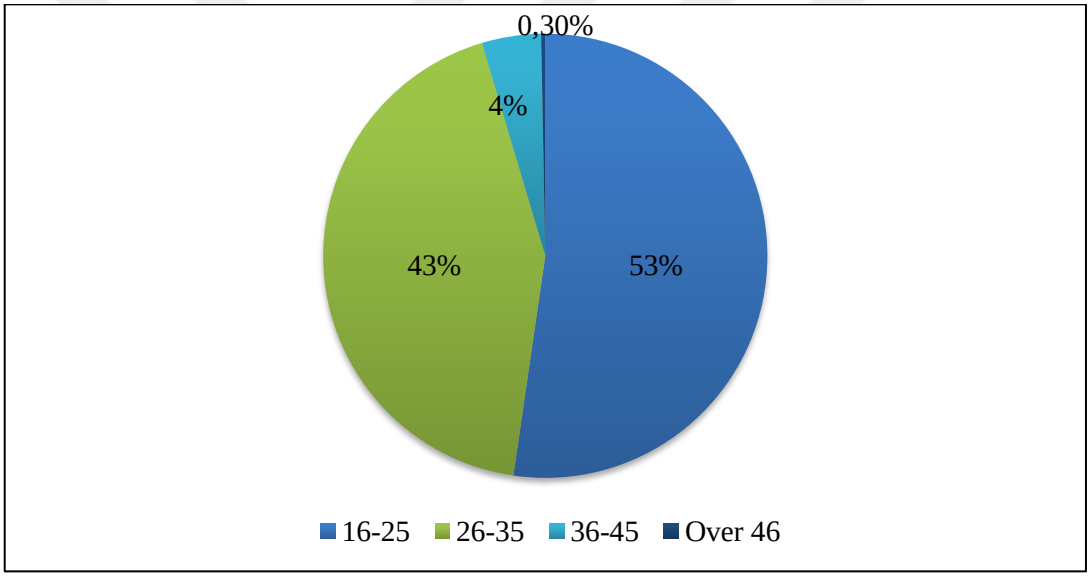


Figure 4.1. Age of the participants

While the second variable was Gender in which 348 participants were classified as either Male or Female. The most frequently observed category of Gender was Male (n = 263, 76%). Female were(n= 85, 24.43%). Male consumers are more likely than female customers to utilize e-banking services, according to the data.

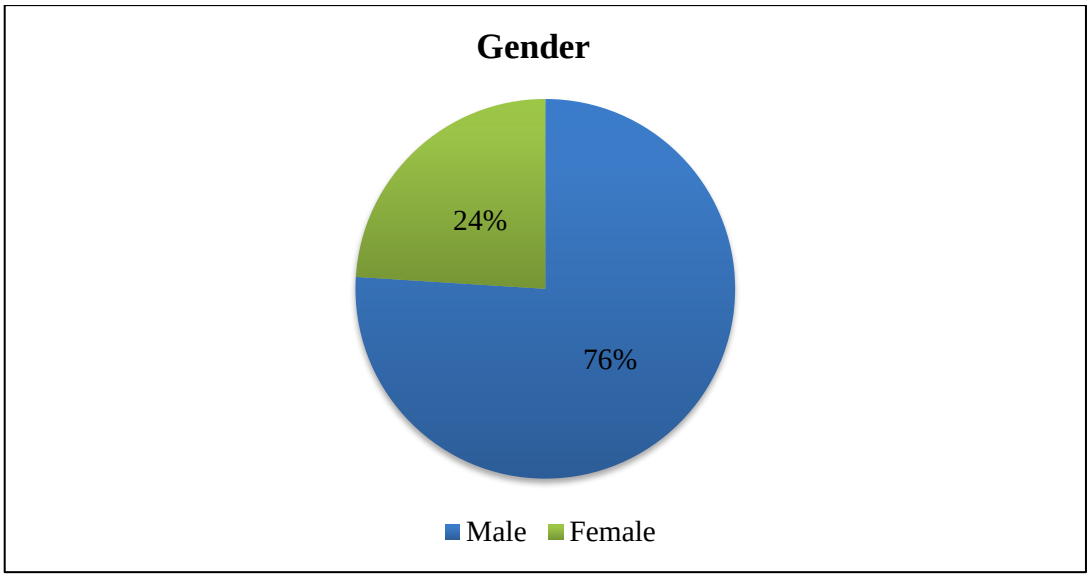


Figure 4.2. Gender of the participants

The research also identified the educational background of 348 participants. The most frequently observed category of Education Level was Undergraduate (n = 178, 51%); 145 or (41.67%) participants are a graduate or master degree holders. Thirteen or (3.74%) of the participants were Non-Academic while 12 or 3.45% of the participants were Academic teachers.

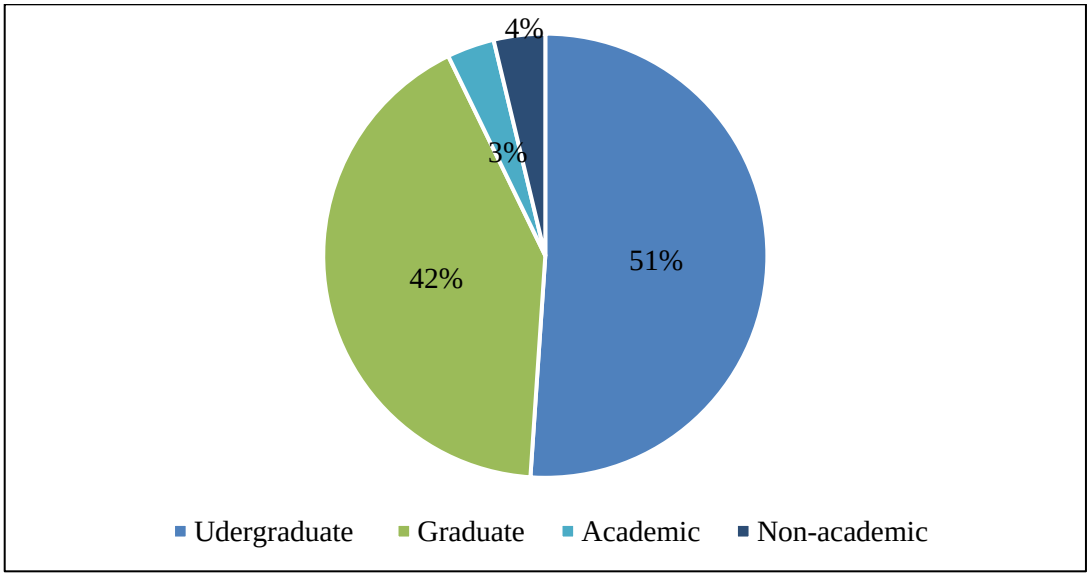


Figure 4.3. Educational level of participants

The participants were also asked about the length of their using the E-banking service. The most frequently observed category of Length of E-banking usage was more than 3 years (n = 132, 38%); 92 or (26.44%) of participants uses between 1 to 2 years; 79 or (22.7%) of them were using e-banking service less than 6 months; 35or (10.06%) between 2 to 3 years users while 10 or (2.87%) of the participants were using between 6 months to 1 year. So that the level of knowledge of E-bank service among respondents is high because of more than 3 years and between 1 to 2 years are the most responses in the study result.

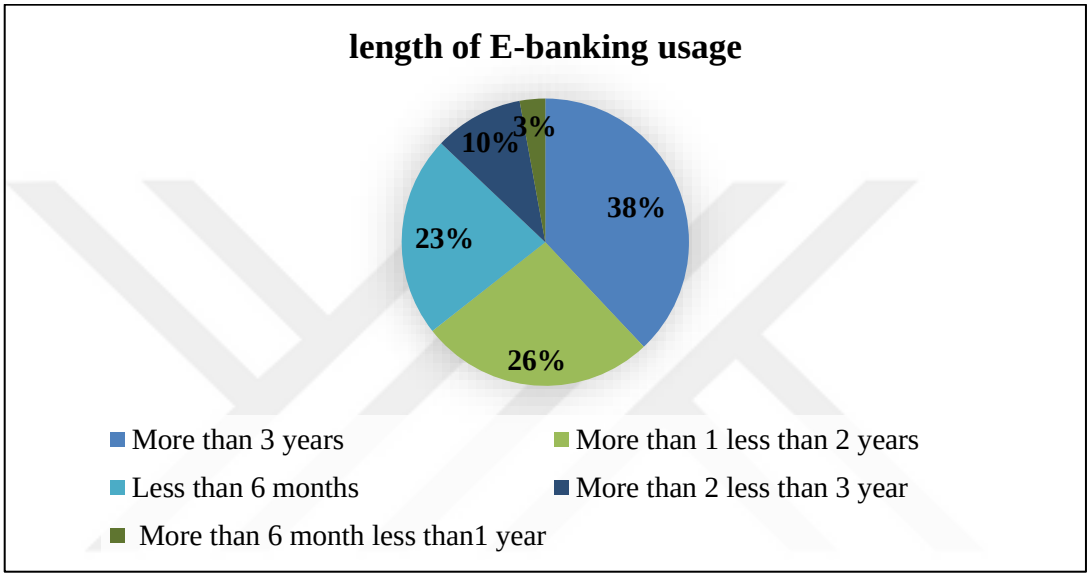


Figure 4.4. The length of E-banking usage

The last demographic variable the respondents had to provide an answer to was their frequency of using the E-banking service. The most frequently observed category of Frequency of E-banking Service was Daily (n = 114, 33%); Once per week (n=75, 21.55%); Twice per week (n=68, 19.54%); Once per month (n=42, 12.07%); Twice per month (n=26, 7.47%); Never (n=23, 6.61%).

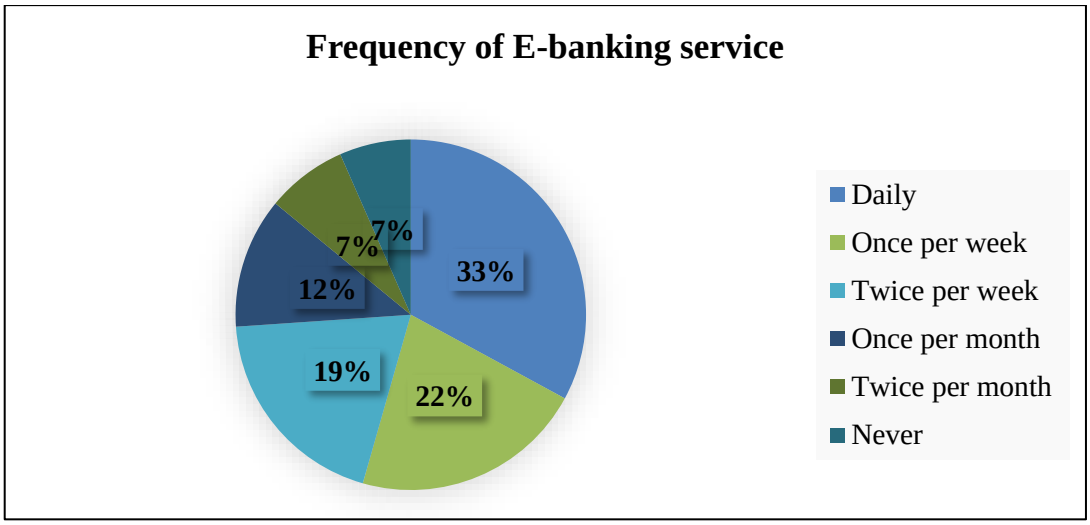


Figure 4.5. Frequency of E-banking service

Table 4.1. Frequency table for nominal variables

Variable	*n*	*%*
Age		
26-35 years	150	43.10
16-25 years	182	52.30
36-45 years	15	4.31
Over 46	1	0.29
Missing	0	0.00
Gender		
Female	85	24.43
Male	263	75.57
Missing	0	0.00
Education Level		
Graduate	145	41.67
Undergraduate	178	51.15
Non-Academic	13	3.74
Academic	12	3.45
Missing	0	0.00
Length of E-Banking usage:		
More than 3 years	132	37.93
Less than 6 months	79	22.70
More than 2 less than 3 years	35	10.06
More than 1 less than 2 years	92	26.44
More than 6 months less1 year	10	2.87
Missing	0	0.00
Frequency of E-banking service		
Daily	114	32.76
Once per month	42	12.07
Twice per week	68	19.54
Never	23	6.61
Once per week	75	21.55
Twice per month	26	7.47
Missing	0	0.00

Note. Due to rounding errors, percentages may not equal 100%.

4.2. Research Question One: What is the effect of the E-bank service quality on customer satisfaction?

To find out the effect of e-banking on customer satisfaction is used these four service quality dimensions are efficiency and ease of use, reliability, responsiveness, assurance, and empathy for e-banking service.

4.2.1. E-Banking Service Quality Dimensions

To interpret descriptive statistics of e-banking service quality dimensions is used this key of interpretations.

Table 4.2. Mean range

Mean range	**Response range**
Strongly Disagree	1: 1.80
Disagree	1.80: 2.60
Neutral	2.60: 3.40
Agree	3.40: 4.20
Strongly agree	4.20: 5

Table 4.3. Efficiency and ease use frequency table

	1 Strongly disagree		Disagree		Neutral		Agree		5 Strongly agree	
	F	%	f	%	F	%	F	%	F	%
The use of E-Banking services is time-saving.	31	8.9	17	4.9	31	9.2	123	35.5	143	41.2
The service delivered through the E-Banking services are quick	25	7.2	18	5.2	60	17.3	132	38	132	32.3
I can complete quickly any transaction through the E-Banking service channels.	25	7.2	36	10.4	58	16.7	143	41.2	85	24.5
I found that E-Banking services are easy to use.	31	8.9	30	8.6	57	16.4	135	38.9	94	27.1
E-Banking services are provided in various languages.	24	6.9	63	18.2	90	25.9	122	35.2	48	13.8
My interaction with the E-Banking system is clear and understandable.	25	7.2	36	10.6	56	16.1	151	43.5	79	22.8
I find the E-Banking system to be flexible to interact with	21	6.1	41	11.8	70	20.2	144	41.5	71	20.5
Learning to operate the E-Banking system is easy for me.	23	6.6	30	8.6	68	19.6	135	38.9	91	26.2

Table 4.3 shows that 8.9% of respondents strongly disagree that the e-banking service is time-saving, 4.9%were disagreed, and just 9.2% were undecided, while 35.5% agreed and 41.2% strongly agree with the banks' e-banking services. Regarding the belief that using e-banking services was quick, the response was as follows, 7.2% strongly disagreed, 5.2% disagreed and just 17.3% were undecided, while 38% agree and 32.2% strongly agreed that e-banking service is quick. Using the e-banking service channels, you may complete any transaction quickly responses were 17.6 % disagreed and 16.7% were undecided that the services offered by the banks were quick us while 65.7% agreed. Regarding the e-banking

services were discovered to be simple to use were as follows; 8.9% and 8.6% disagreed and just 16.4% were undecided that the e-banking services are easy to use while 38.9% of responses were agreed and 27.1% strongly agreed.

Furthermore, the e-banking services are provided in different languages 25.1% of the responses have disagreed, 25.9% undecided and 49% agreed while the clearance of e-banking system and user-friendly 17.8% disagreed, 16.1% undecided, and 66.8% were agreed that the e-banking systems are clear and understandable. And finally, interacting with an e-banking system should be flexible 17.9% of participants have disagreed and 20.2% of responses were undecided while 62% of responses were agreed that the e-banking systems are flexible to interact with. While the participants asked It's simple to learn how to use the e-banking system their responses as follows, 6.6% were strongly disagreed, 8.6% disagree and just 19.6% were undecided while 65.1 were agreed it is easy to learn to use e-banking systems.

Table 4.4. Descriptive statistics of efficiency and ease use

Descriptive Statistics	Interpretations	Mean	Std. Deviation
The use of E-Banking services is time-saving.	Agree	3.95	1.229
The service delivered through the E-Banking services are quick	Agree	3.83	1.152
I can complete quickly any transaction through the E-Banking service channels.	Agree	3.65	1.166
I found that E-Banking services are easy to use.	Agree	3.67	1.216
E-Banking services are provided in various languages.	Neutral	3.31	1.128
My interaction with the E-Banking system is clear and understandable.	Agree	3.64	1.153
I find the E-Banking system to be flexible to interact with	Agree	3.59	1.120
Learning to operate the E-Banking system is easy for me.	Agree	3.69	1.14
Overall Mean	**Agree**	**3.66**	**.84588**

Table 4.4 shows the descriptive statistic of efficiency and ease the use of e-banking service for the following results, 3.95 mean and 1.229 standard deviations which interpret that most participants agreed using of e-banking services are time-saving. The average of service delivered through e-banking services are fast, 3.83 and 1.152 standard deviation which means the responders have agreed the service delivery of e-banking services are

quick. While the e-banking service channels are quickly complete any transactions, 3.65 mean and 1.166 standard deviations, which means e-banking services transactions are quick. The participants agreed that the e-banking services are easy to use with results of 3.67 mean and 1.216 standard deviations. While some of the participants were undecided that the e-banking services are provided in different languages, they mean 3.31 and 1.128 standard deviations. Therefore, the clearance and understandable of e-banking services interpret mean 3.64 and standard deviation 1.153, while the e-banking systems are flexible to interact present mean 3.59 and 1.120 standard deviations and finally, it is easy to learn how to use e-banking service interpret the mean 3.69 and 1.14 which mean the most participants were agreed that the flexibility, clearance and easy to learn how it uses e-banking services.

Table 4.5. Reliability frequency table

	1 Strongly disagree		Disagree		Neutral		Agree		5 Strongly agree	
	F	%	F	%	F	%	F	%	F	%
I have high confidence in the reliability of E-Banking services	27	7.8	43	12.4	87	25.1	148	42.7	42	12.1
E-Banking service is reliable and dependable	20	5.8	54	15.6	95	27.4	136	39.2	42	12.1
E-Banking services perform for me the service right on the first time.	22	6.3	45	13.0	86	24.8	149	42.9	45	13
I have always found E-Banking service channels in working order	23	6.6	54	15.6	95	27.4	130	37.5	45	13.0

Table 4.5 shows that 7.8% of respondents strongly disagree that they have high confidence in the reliability of e-banking services, 12.4%were disagreed, and 25.1% were undecided, while 42.7% agreed and 12.1% strongly agree with the reliability confidence of e-banking services. Regarding the belief that e-banking service is reliable, the response was as follows, 5.8% strongly disagreed, 15.6% disagreed and 27.4% were undecided, while 45% agree and 13% strongly agreed. e-banking services provide excellent service the first time responses were 19.3 % disagreed and 24.8% were undecided while 58% agreed. Regarding e-banking service channels that have always been operational were as follows; 6.6% and 15.6% disagreed and 27.4% were undecided while 37.5% of responses were agreed and 13% strongly agreed.

Table 4.6. Descriptive statistics of reliability

Descriptive Statistics			
	Interpretation	Mean	Std. Deviation
I have high confidence in the reliability of E-Banking services	Neutral	3.39	1.094
E-Banking service is reliable	Neutral	3.36	1.065
E-Banking services perform for me the service right on the first time.	Agree	3.43	1.071
I have always found E-Banking service channels in working order	Neutral	3.35	1.095
Overall Mean	**Neutral**	**3.3826**	**.82986**

Table 4.6 shows the descriptive statistic reliability of e-banking service for the following results, 3.39 mean and 1.094 standard deviations which interpret that most participants are undecided about the reliability of e-banking. The average of e-banking services is reliable 3.36 and 1.065 standard deviation which means the responders were neither agreed nor disagreed. While e-banking services provide excellent service the first time, 3.43 mean and 1.071 standard deviations, which means e-banking services provide good service for the first time. The participants were undecided that the e-banking service channels have always been operational with results of 3.35 mean and 1.095 standard deviations.

Table 4.7. Responsiveness frequency table

	1 Strongly disagree		Disagree		Neutral		Agree		5 Strongly agree	
	F	%	F	%	F	%	F	%	F	%
E-Banking services are available 24/7	25	7.2	33	9.5	72	20.7	111	32.0	106	30.5
E-Banking services respond immediately to clients	23	6.6	34	9.8	90	25.9	123	35.4	77	22.2
Help is immediately available if there is any problem	28	8.1	59	17.0	107	30.8	107	30.8	46	13.3
E-Banking services provide prompt answers to your questions	18	5.2	55	15.9	119	34.3	108	31.1	47	13.5
Bank deals respectfully with customer complaints about electronic service	28	8.1	47	13.5	90	25.9	113	32.6	69	19.9

Table 4.7 shows that 7.2% of respondents strongly disagree that the e-banking services are available every time, 9.5%were disagreed, and 20.7% were undecided, while 32% agreed and 30.5% strongly agreed 24/7 availability of e-banking services. Regarding the belief that e-banking services respond immediately to clients, the response was as follows, 6.6% strongly disagreed, 9.8% disagreed and 25.9% were undecided, while 35.4% agree and 22.2% strongly agreed. Help is immediately available if there is any problem, responses were 8.1% strongly disagreed, 17.0% disagree and 30.8% were undecided while 59.3% agreed. Regarding e-banking service provide prompt answers to your questions were as follows; 5.2% and 15.9% disagreed and 34.3% were undecided while 47% of responses were agreed and 13.5% strongly agreed. While customer complaints about electronic services are handled professionally by the bank 8.1% of responses were strongly disagreed, 13.5% disagreed and 25.9% were undecided while 69% were agreed and 19.9% were strongly agreed that customer complaints about electronic services are handled professionally by the bank.

Table 4.8. Descriptive statistics of responsiveness

Descriptive Statistics			
	Interpretations	Mean	Std. Deviation
E-Banking services are available 24/7	Agree	3.69	1.205
E-Banking services respond immediately to clients	Agree	3.57	1.134
Help is immediately available if there is any problem	Neutral	3.24	1.130
E-Banking services provide prompt answers to your questions	Neutral	3.32	1.058
Bank deals respectfully with customer complaints about electronic service	Agree	3.43	1.184
Overall Mean	**Agree**	**3.4496**	**.86797**

Table 4.8 shows the descriptive statistic responsiveness of e-banking service for the following results, 3.69 mean and 1.205 standard deviations which interpret that most participants agreed every time availability of e-banking. The average of e-banking services respond immediately to clients 3.57 and 1.134 standard deviations which means the responders were agreed. While help is immediately available if there is any problem, 3.24 mean and 1.130 standard deviations, which means help solution of the problems does not available at right time. The participants were undecided that the e-banking service provides prompt answers to your questions with results of 3.32 mean and 1.058 standard deviations which mean e-banking services do not answer a question immediately. Finally, customer complaints about electronic services are handled professionally by the bank, the result of

3.43 mean and 1.184 standard deviation shows that the most of participants agreed that banks handled customer complaints about e-banking services.

Table 4.9. Assurance and empathy frequency table

	1 Strongly disagree		Disagree		Neutral		Agree		5 Strongly agree	
	F	%	F	%	F	%	F	%	F	%
E-Banking services do not allow others to access my accounts	28	8.1	42	12.1	65	18.7	120	34.6	92	26.5
E-Banking service provides high protection for my banking transactions	16	4.6	33	9.5	79	22.8	140	40.3	79	22.8
E-Banking service is secure and safe from any fraud or hacking	31	8.9	71	20.5	81	23.3	110	31.7	54	15.6
The security devices of the E-Banking services protect the data that are sent by me	13	3.7	41	12.1	100	28.8	135	38.9	57	16.4
E-Banking services offers secure personal privacy	16	4.6	39	11.2	96	27.7	130	37.5	66	19.0

Table 4.9 shows that 8.1% of respondents strongly disagree that the e-banking services do not allow another account to access, 12.1%were disagreed, and 18.7% were undecided, while 34.6% agreed and 26.5% strongly agreed. Regarding e-banking offers a high level of security for banking transactions, the response was as follows, 4.6% strongly disagreed, 9.5% disagreed and 22.8% were undecided, while 40.3% agree and 22.8% strongly agreed. E-banking service is safe and secure from any type of fraud or hacking, responses were 8.9% strongly disagreed, 20.5% disagree and 23.3% were undecided while 47.3% agreed. Regarding the data that is sent is protected by the security devices used by e-banking services responses as follows; 3.7% and 12.1% disagreed and 28.8% were undecided while 57% of responses were agreed and 16.4% strongly agreed. While Secure personal privacy is provided by e-banking services 4.6% of responses were strongly disagreed, 11.2% disagreed

and 27.7% were undecided while 37.5% were agreed and 19.0% were strongly agreed that Secure personal privacy is provided by e-banking services.

Table 4.10. Descriptive statistics of assurance and empathy

Descriptive Statistics			
	Interpretations	Mean	Std. Deviation
E-Banking services do not allow others to access my accounts	Agree	3.59	1.226
E-Banking service provides high protection for my banking transactions	Agree	3.67	1.071
E-Banking service is secure and safe from any fraud or hacking	Neutral	3.24	1.202
The security devices of the E-Banking services protect the data that are sent by me	Agree	3.52	1.024
E-Banking services offer secure personal privacy	Agree	3.55	1.064
Overall Mean	**Agree**	**3.5164**	**.86355**

Table 4.10 shows the descriptive statistic Assurance and empathy of e-banking service for the following results, 3.59 mean and 1.226 standard deviations which interpret that most participants agreed the e-banking account does not allow others to access. The average of e-banking services provides high protection for banking transactions 3.67 and 1.071 standard deviation which means the responders were agreed. While e-banking service is safe and secure from any type of fraud or hacking, 3.24 mean and 1.202 standard deviations, which means some of the participants neither agree nor disagree safe and secure of e-banking services. the data that is sent is protected by the security devices used by e-banking services with results of 3.52 mean and 1.024 standard deviations which mean e-banking services provide secure personal privacy. Finally, e-banking services provide secure personal privacy the result of 3.55 mean and 1.064 standard deviation shows that the most of participants agreed that Secure personal privacy is provided by e-banking services.

Table 4.11. Service quality dimensions of e-banking service

E-banking service Quality Dimension	**Mean**	**Interpretations**
Efficiency and ease use	3.6644	Agree
Reliability	3.3826	Neutral
Responsiveness	3.4496	Agree
Assurance and empathy	3.5164	Agree
Overall mean	**3.50325**	**Agree**

Table 4.11, highlights the descriptive statistics about affect service quality dimensions such as efficiency and ease of use, reliability, responsiveness, assurance, and empathy on customer satisfaction. To achieve this objective respondents were subjected to several questions to provide answers to research question one. The respondents were asked a series of questions targeted at eliciting their responses to the stated study purpose. First, Respondents rated themselves the efficiency and ease of use at the mean of (3.6644)with a standard deviation of(0.84588). This indicates with the overall mean of efficiency and standard deviation influences customer satisfaction. Second, respondents rated the statements of reliability at the lowest mean of (3.3826) and standard deviation (0.82986). Therefore, respondents generally perceived neutral agreement on this dimension and does not influence customer satisfaction. Third, respondents rated the statements of responsiveness at a mean of (3.4496) and a standard deviation of (0.86797). Therefore, respondents generally perceived that responsiveness had some influence on customer satisfaction. Finally, respondents rated the statements of assurance and empathy at (3.5164) and standard deviation (0.86355) at the mean index of 3.51 is agreed to be good. Therefore, respondents generally perceived that assurance and empathy influence customer satisfaction. Finally, the overall mean of e-banking service quality dimension is which means the e-banking service quality has an impact on customer satisfaction.

4.3. Research Question Two

How much do service quality dimensions (Efficiency and ease use, reliability, responsiveness, and assurance and empathy) explain customer satisfaction?

The regression analysis is used to test the following hypothesis:-

H1: Efficiency and ease of use has a positive impact on customer satisfaction

H2: Reliability has positively affected the customer satisfaction

H3: Responsiveness directly influenced the customer satisfaction

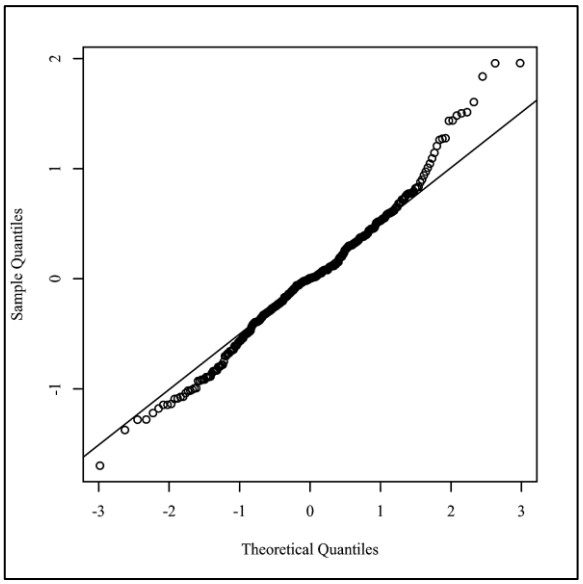
H4: Assurance and empathy positively affect the customer satisfaction

Tables 4.12, Tables 4.13, Tables 4.14, Tables 4.15 and show simple and multiple regression tests using the entering method. Linear regression is a statistical method aimed at determining the degree to which variables are interrelated. İt helps us understand how one of the independent variables influences the standard value of a dependent variable. A linear regression analysis to see if Efficiency, Reliability, Responsiveness, and Assurance might predict Satisfaction, a study was carried out. Variance Inflation Factors (VIFs) were measured to identify the presence of multicollinearity between predictors. High VIFs indicate increased effects of multicollinearity in the model. VIFs greater than 5 are cause for concern, whereas VIFs of 10 should be considered the maximum upper limit (Menard, 2009). All predictors in the regression model have VIFs less than 10. Table 4.12 presents the VIF for each predictor in the model.

Table 4.12. Variance inflation factors for efficiency and ease use, reliability, responsiveness, and assurance and empathy

Variable	Variance Inflation Factors
Efficiency and ease use	1.80
Reliability	1.91
Responsiveness	2.20
Assurance and empathy	2.05

Normality was also determined by comparing the model residuals quantiles against the quantiles of a Chi-square distribution, often known as a Q-Q scatterplot (DeCarlo, 1997). The residual quantiles must not deviate significantly from the theoretical quantiles to meet the normalcy assumption. The presence of large variances may indicate that the parameter estimates are inaccurate.



Q-Q scatterplot for normality of the residuals for the regression model.

Figure 4.6. Presents a Q-Q scatterplot of the model residuals

The results of the linear regression model were significant, F (4,343) = 109.31, p < .001, R^2 = 0.56, as indicated by the below model summary, R Square value is 0.56 and this demonstrates that the four independent variables could explain about 56% of the variance in customer satisfaction on e-banking services. These are adequate to demonstrate that an important association amongst the variables. Below Table 4.13 is the model summary of linear regression.

Table 4.13. Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.749[a]	.560	.555	.59056
a. Predictors: (Constant), Assurance and empathy, Efficiency, Reliability, Responsiveness				

The ANOVA table sheds light on the variance analysis. The regression has explained about 56% of the change. The model is fit for purpose since the significance value is less than 0.05, representing a reliable result. Below the table, 4.13 is summarizing the ANOVA result.

Table 4.14. ANOVA

	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	152.493	4	38.123	109.311	.000[b]
	Residual	119.625	343	.349		
	Total	272.118	347			

a. Dependent Variable: Satisfaction

b. Predictors: (Constant), Assurance and empathy Efficiency, Reliability, Responsiveness

Efficiency and easy use significantly predicted Satisfaction, B = 0.22, t (343) = 4.40, p < .001. This indicates that on average, a one-unit increase of Efficiency will increase the value of Satisfaction by 0.22 units. Reliability significantly predicted Satisfaction, B = 0.20, t (343) = 3.83, p < .001. This indicates that on average, a one-unit increase of Reliability will increase the value of Satisfaction by 0.20 units. Responsiveness significantly predicted Satisfaction, B = 0.31, t (343) = 5.65, p < .001. This indicates that on average, a one-unit increase of Responsiveness will increase the value of Satisfaction by 0.31 units. Assurance and empathy significantly predicted Satisfaction, B = 0.20, t (343) = 3.73, p < .001. This indicates that on average, a one-unit increase of Assurance and empathy will increase the value of Satisfaction by 0.20 units. Table 4.14 summarizes the results of the regression model.

Table 4.15. Results for linear regression with efficiency, reliability, responsiveness, and assurance and empathy predicting satisfaction

Variable	*B*	*SE*	95% CI	β	*t*	*p*
(Intercept)	0.07	0.12	[-0.16, 0.30]	0.00	0.58	.561
Efficiency and ease of use	0.22	0.05	[0.12, 0.32]	0.21	4.40	< .001
Reliability	0.20	0.05	[0.10, 0.31]	0.19	3.83	< .001
Responsiveness	0.31	0.05	[0.20, 0.41]	0.30	5.65	< .001
Assurance and empathy	0.20	0.05	[0.09, 0.30]	0.19	3.73	< .001

Note. Results: $F(4,343) = 109.31$, $p < .001$, $R^2 = 0.56$
Regression Equation: Satis = 0.07 + 0.22*Eff + 0.20*Rel + 0.31*Ress + 0.20*Assu

Similarly, several Indian researchers [46, 47], discovered the following benefits from their respondents: there are no barrier limits; it is convenient; it has altered traditional banking processes; internet apps are the sole method to stay linked to consumers at any location and at any time. It improves banking performance by allowing customers and service providers to get information quicker; it saves time and encourages queue management, which is one of the most essential aspects of e-banking service quality.

4.4. Research Question Three

What is the level of customer satisfaction towards commercial banking online?

Descriptive analysis of the customer satisfaction level towards commercial online banking shows the following tables.

Table 4.16. Customer satisfaction level in using E-Banking services

Variable	Strongly disagree		Disagree		Neutral		Agree		Strongly agree	
	F	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
I am satisfied with the transaction processing via E-Banking services	19	5.5	33	9.5	75	21.6	148	42.7	72	20.7
I think I made the correct decision to use the E-Banking services.	21	6.1	34	9.8	73	21	149	42.9	70	20.2
My satisfaction with the E-Banking services is high	17	4.9	32	9.2	86	24.8	136	39.2	76	21.9
I am satisfied with the bank's e-services quality.	13	3.7	39	11.2	87	25.1	133	38.3	75	21.6
Overall E-Banking services is better than my expectations	24	6.9	41	11.8	99	28.5	119	34.3	64	18.4
I prefer using E-Banking services instead of visiting the branch for doing my transactions	15	4.3	36	10.4	60	17.3	107	30.8	101	29.1

Table 4.16 shows that 42.82% of respondents agreed that they were satisfied with the e-banking transaction processes, 21.40%were strongly satisfied, and just 21.55% were undecided, while 9.7% disagreed and 5.46% strongly disagree with the banks' e-banking services. Regarding the belief that using e-banking services was the right decision, the response was as follows, 62.93% agreed to choose e-banking services while 37.03% disagree.

The response on e-banking services has a high level of satisfaction as 61.49 % agreed and 24.14% were undecided that the services offered by the banks were satisfied us while 14.37% disagreed. Regarding the quality of the bank's e-services, the customer responses were as follows; 38.51% and 22.70% agreed that the quality of services was satisfying while 24.43% of responses are undecided and 14.37% disagreed.

Furthermore, the e-banking services are often better than customers' expectations were the responses 51.71% of the agreed while 29.02% undecided and 19.25 disagreed

respectively that their expectations. And finally, when customers were asked if they prefer using e-banking services instead of visiting the branch for doing my transactions, these were their responses 65.21% preferred using e-banking services while 19.54% of responses were undecided and 15.23% prefer traditional banking services. therefore, the descriptive statistic of customer satisfaction level shows 3.6206 mean and 0.88641, standard deviation, which means most of the respondents agreed and, satisfied with the e-banking service quality and were willing to continue using the service.

Table 4.17. Descriptive statistics of customer satisfaction level in using e-banking services

Descriptive Statistics			
	Interpretations	Mean	Std. Deviation
I am satisfied with the transaction processing via E-Banking services	Agree	3.64	1.081
I think I made the correct decision to use the E-Banking services.	Agree	3.61	1.097
My satisfaction with the E-Banking services is high	Agree	3.64	1.072
I am satisfied with the bank's e-services quality.	Agree	3.63	1.058
Overall E-Banking services are better than my expectations	Agree	3.46	1.128
I prefer using E-Banking services instead of visiting the branch for doing my transactions	Agree	3.76	1.152
Mean Index	**Agree**	**3.6206**	**.88641**

Table 4.17 shows the descriptive statistic customer satisfaction level in using e-banking services for the following results, 3.64 mean and 1.081standard deviations which interpret that most participants agreed the e-banking transaction processes were satisfied. The average of using e-banking services is the right decision for the customer 3.61 and 1.097 standard deviation which means the responders were agreed. While the satisfaction level; of customers in e-banking service is high 3.64 mean and 1.072 standard deviations, which means some of the participants agreed that the e-banking services were satisfied with. the quality of the bank's e-services with results of 3.63 mean and 1.058 standard deviations which mean e-banking services provide high-quality service. the e-banking services are often better than customers' expectations with a result of 3.46 mean 1.128 standard deviation, which means that most participants agreed. Finally, prefer using e-banking services instead of visiting the branch for doing bank transactions, the result of 3.76 mean and 1.152 standard deviation shows that most of the participants prefer using e-banking services.

5. DISCUSSION AND CONCULSION

5.1. Discussion and Summary Of Findings

5.1.1. Introduction

This chapter presents conclusions and discussion from the analysis and key agreed recommendations based on the research questions and objectives. Each research question has been analyzed accordingly and therefore answered the set objectives through in-depth analysis.

The study discusses the findings of the study in guidance with the research objectives. The study achieved its specific objectives that were:

- ✓ To assess the effect of the E-bank service quality on customer satisfaction.
- ✓ To describe how much do service quality dimensions explain customer satisfaction?
- ✓ To identify the level of customer satisfaction towards commercial banking online.

In total, 348 samples of data, consisting of males and females, have been collected and analyzed. In terms of gender, the most frequently observed category was Male 76%, while Females accounted for about 24% of the samples collected. Although the questionnaire was targeting the educated Somali population, it demonstrated male domination in the research. Thus, this could be seen as a clear demonstration that cultural challenges, amongst others, facing the country are playing an integral role in the number of males and females in schools in Somalia (i.e., males in schools outnumber females). It was observed that the highest levels were observed to be those with undergraduate or bachelor's degrees which carried 51% of the participants while 41.6% of them are holding Graduate or master's degrees. The lowest number was those with non-academic which took 4% of the participants followed by those with academic that took 3% of the total participants. These findings show that Customers differ in education level from those with a high level of education to lower ones. However, the highest age was observed to be those with 16-25years which covered 53% of the participants followed by those aged 26-35years which covered 43% of the participants, and the lowest being the customers above 40 years. Additionally, the findings revealed that the

highest ages were between the ages of 16 and 35, which corresponds to the ages of the majority of students.

The maximum number of participants were detected to be those with experience between 1-2 years of experience that covered 37.93% followed by those more than 3 years that covered 26.44%. However, the lowest numbers of respondents were detected to be those below between 6 months to 1year of experience. These findings show that Customers have enough experience with e-banking services As for e-banking services frequently usage the most of the participants indicated that used daily, once a week, and twice a week are more than 74% of participants. These findings show that have availability e-banking services.

A large percentage of bank customers who use e-banking services were also satisfied with the e-banking services provided. Accessibility of e-banking services and transaction processes, on the other hand, was revealed to be another quality associated with the comfortability of utilizing the services. According to the findings, a large number of people were pleased with e-banking services and would choose to utilize them instead of traditional banking services. Previous research(e.g [48, 49]) in some countries, has been argued that e-banking represents a high level of consumer satisfaction. Indeed, the findings of this study revealed that consumer satisfaction in e-banking services in Mogadishu, Somalia, is quite high. Therefore, the four service quality dimensions have a significant impact on customer satisfaction for the following findings:

- ✓ On average, a one-unit increase in efficiency will increase the value of satisfaction by 0.22 units.
- ✓ On average, a one-unit increase in reliability will increase the value of satisfaction by 0.20 units.
- ✓ On average, a one-unit increase in responsiveness will increase the value of satisfaction by 0.31 units.
- ✓ On average, a one-unit increase in assurance and empathy will increase the value of satisfaction by 0.20 units.

However, when all service quality dimensions are considered as predictors of customer satisfaction, the most significant results are responsiveness followed by efficiency and ease of use, reliability, assurance, and empathy. While this study not supported previous research [50] found the most significant provider in the service quality dimension is Reliability.

5.2. Conclusion

The purpose of this study was to examine the effect of e-banking services quality on customer satisfaction of those customers living in Mogadishu Somalia special students and professionals people. According to the findings, e-banking services have a strong positive significant effect on customer satisfaction. Customers are pleased about the use of e-banking services quality dimensions such as efficiency and ease to use reliability, responsiveness, assurance, and empathy. They have significant benefits from using these services, most especially time savings, accessibility, and efficiency. However, customer satisfaction is increased by the efficiency and ease of use of e-banking services. Therefore, the responsiveness and communication of e-banking services have a strong positive significant effect on customer satisfaction. Responding to and resolving customer complaints contributes to customer satisfaction. Additionally, e-banking services are more secure, resulting in fewer transaction risks. The study reveals how it's easy to expand the business beyond existing means of doing business in Somalia and making people do business with ease since long queues at banks won’t be necessary anymore since e-banking is a saver and faster when it comes to doing business. The expect or change behaviors of the commercial companies delivering E-banking service on customers in Somalia.

5.3. Recommendations

According to the findings, various stakeholders in the banking industries must improve the technological infrastructure of the banking industries by focusing more on e-banking services quality, which will allow them to reach a larger number of customers, provide greater flexibility, interactivity, and accessibility than traditional banking. Commercial banks must invest extensively in technology because this will greatly encourage the use of electronic banking technologies, which will have an impact on their financial success. And also, it recommends commercial bank management to satisfy their customers, to emphasize and improve service quality measurement tools. It is recommended for banks to invest in secure and reliable technology to safeguard the privacy of the customers while strengthening the faith people have in services that are available in transacting businesses easily. Somalia commercial banks must also expand their size, as this has a favorable impact on their financial success.

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APPENDICES

Appendix A: E-banking Service Quality Dimensions

Strongly Agree Agree Neutral Disagree Strongly disagree

Efficiency and ease of use

1. The use of E-Banking services is time-saving.

2. The service delivered through the E-Banking services are quick

3. I can complete quickly any transaction through the E-Banking service channels.

4. I found that E-Banking services are easy to use.

5. E-Banking services are provided in various languages.

6. My interaction with the E-Banking system is clear and understandable.

7. I find the E-Banking system to be flexible to interact with

8. Learning to operate the E-Banking system is easy for me.

Reliability

Strongly Agree Agree Neutral Disagree Strongly disagree

9. I have high confidence in the reliabilityof E-Banking services

10. E-Banking service is reliable

11. E-Banking services perform for me the serviceright on the first time.

12. I have always found E-Banking service channelsin working order

Responsiveness

Strongly Agree Agree Neutral Disagree Strongly disagree

13. E-Banking services are available 24/7

14. E-Banking services respond immediately to clients

15. Help is immediately available if there is any problem

16. E-Banking services provide prompt answers to your questions

17. Bank deals respectfully with customer complaints about electronic service

Assurance and empathy

Strongly Agree Agree Neutral Disagree Strongly disagree

18. E-Banking services do not allow others to access my accounts

19. E-Banking service provides high protection for my banking transactions

20. E-Banking service is secure and safe from any fraud or hacking

21. The security devices of the E-Banking services protect the data that are sent by me

22. E-Banking services offer secure personal privacy

Satisfaction with quality of service

Strongly Agree Agree Neutral Disagree Strongly disagree

23. I am satisfied with the transaction processing via E-Banking services

24. I think I made the correct decision to use the E-Banking services.

25. My satisfaction with the E-Banking services is high

26. I am satisfied with the bank's e-services quality.

27. Overall E-Banking services is better than my expectations

28. I prefer using E-Banking services instead of visiting the branch for doing my transactions

Appendix B: Demographic Questions

Age

- 16-25 years
- 26-35 years
- 36-45 years
- Over 46

Gender

- Male
- Female

Education Level

- Undergraduate
- Graduate
- Academic presonal
- Non-Academic presonal

Length of E-Banking usage

- Less than 6 months
- More than 6 months less 1 year
- More than 1 less than 2 years
- More than 2 less than 3 years
- More than 3 years

Frequency of E-banking service

- Daily
- Once per week
- Twice per week
- Once per month
- Twice per month
- Never