

**INFLUENCE OF ELECTRONIC BANKING ON CUSTOMER SATISFACTION
AMONG COMMERCIAL BANKS IN KENYA**

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**THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR
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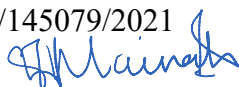
DECLARATION

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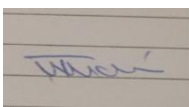
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Approval

This research project has been submitted for examination with my approval as the university supervisor.

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ABSTRACT

Customer satisfaction has been central to the operations of commercial banks and this has resulted in the institutions designing new strategies and introducing new digitalized systems to lead to operational excellence. The commercial banks have been rolling out new technologies to improve customer satisfaction and foster service provision. However, even with the high adoption rates, the Central Bank of Kenya indicated that only 56% of bank customers were satisfied with the services they received in 2022. This research sought to establish the effect of electronic banking on customer satisfaction of commercial banks in Kenya. Specifically, the research sought to establish the effect of mobile banking on customer satisfaction of commercial banks in Kenya; determine the influence of online banking on customer satisfaction of commercial banks in Kenya; to examine the effect of automated teller machines on customer satisfaction of commercial banks in Kenya. Further the study examined the moderating effect of e-banking security factors on customer satisfaction of commercial banks in Kenya. The research was grounded on the technology acceptance model and technology threat avoidance theory. The study applied a positivist research philosophy with a quantitative descriptive design utilized in the survey. The population for the study was drawn from the deposit account in any of the 39 operational commercial banks. A sample of 384 bank customers was randomly selected to participate in the study. The research employed structured questionnaires in the data collection. The research tool was piloted among 38 customers to aid in reliability and validity test of the instrument. The collected survey data was analyzed using descriptive and inferential analysis. Findings were presented using figures and tables. The correlation analysis revealed there was weak positive and significant relation between mobile banking channels and customer satisfaction among commercial banks. The study further established there was weak positive and significant effect between online banking channels and customer satisfaction among commercial banks. The analysis revealed there was a weak positive and significant relation between automated teller machine channels and customer satisfaction among commercial banks. The regression analysis revealed that there was a positive and statistically significant relation between electronic banking channels and the customer satisfaction among commercial banks in Kenya. Additionally, there was a positive and significant moderating effect of security factors on the relationship between electronic banking channels and the customer satisfaction among commercial banks in Kenya. On the first variable mobile banking channels the findings showed demonstrated a positive and significant effect between mobile banking channels and the customer satisfaction among commercial banks in Kenya. The results on the second variable demonstrated a positive and significant effect between online banking channels and the customer satisfaction among commercial banks in Kenya. On the third objective the results revealed a positive and significant effect between automated teller machines channels and the customer satisfaction among commercial banks in Kenya. Findings further showed a positive and significant effect between security and the customer satisfaction among commercial banks in Kenya. Conclusions of the study were that e-banking services have positive effects on the satisfaction of bank customers and that security guarantees increase the satisfaction of customers with e-banking services. Based on these conclusions, the study recommends that commercial banks focus on improving the usability and affordability of mobile banking application to ensure they are user-friendly and cost-effective, that banks continuously improve e-banking platforms through regular updates, and that banks expand their network and outreach to ensure seamless connectivity even in remote areas. The study further calls on banks to ensure they guarantee security of e-banking channels to increase trust and satisfaction with e-banking channels.

Keywords; e-banking, mobile banking, online banking, ATM, customer satisfaction, e-banking security

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DEDICATION

I dedicate this thesis to my family who have been an integral part in successfully completing this journey. Asante Sana.



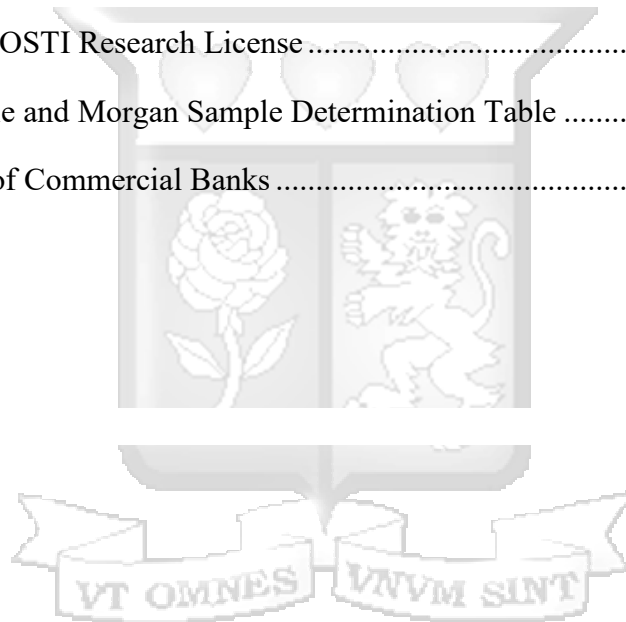
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LIST OF ABBREVIATIONS

24/7	Around-the-clock
ATM	Automated Teller Machine
CBK	Central Bank of Kenya
E-Banking	Electronic Banking
E-Business	Electronic Business
ICT	Information and Communication Technology
IT	Information Technology
M-Banking	Mobile Banking
PC	Personal Computer
POS	Point of Sale
ROE	Return on Equity
TAM	Technology Acceptance Model

DEFINITION OF TERMS

Automated teller machine

Automated Teller Machines (ATMs) are electronic banking machines that enables customers to perform various transactions such as cash withdrawals, deposits, balance inquiries, and more (Sadiku, et al., 2022).

Customer satisfaction

According to Angusamy et al. (2022), customer satisfaction is a critical index for evaluating the performance of businesses, particularly in the banking industry, and a major factor for banks to remain competitive in today's market.

Electronic banking

Electronic banking is a type of remote banking service offered by accredited banks or their agents via equipment that is either directly managed by the bank or is subject to an external arrangement (Abdi, Hussein, & Kadir, 2022).

Mobile banking

Mobile banking is a form of electronic banking that enables customers to have access to their accounts and perform various banking operations using their mobile devices. This service is provided through mobile applications provided by the financial institution or through text messages (Khatoon et al., 2020).

Online banking

Online banking refers to the utilization of web-based platforms and internet services to access and manage bank accounts, make transactions, and conduct various banking activities through internet-enabled devices (Sambaombe & Phiri, 2021)

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In the current rapidly evolving financial landscape, meeting customer expectations stands at the forefront of concerns for banks and financial institutions (Ahmad, Bhatti, & Hwang, 2020). Given that businesses gain a lot from increased adoption of emerging technology, and e-banking improves banks' ability to meet expectations for increased convenience and flexibility that cannot be offered through traditional banking (Mawejje & Lakuma, 2019). However, while e-banking purports to meet customer needs more effectively, the FinAccess (2021) survey confirms that these new innovations bring with them increased consumer protection concerns. Dhairyasheel and Sambhaji (2022) and Angusamy, Yee and Kuppusamy (2022) confirm that customers are complaining about an increased likelihood of encountering fraudulent actors, unexpected charges, inability to access mobile money services and crashing of internet and mobile banking applications. Delineating the factors that influence satisfaction with these services is critical to making improvements that would increase these institutions' ability to satisfy customers.

Bhat (2017) asserts that customers expect electronic banking services to be not only convenient and efficient but also secure and responsive to their financial needs. Various international surveys and studies have consistently shown that electronic banking has a significant impacts on customer satisfaction. According to the 2020 FIS Performance Against Customer Expectations (PACE) report, globally, about 69% of bank customers were satisfied with their digital banking experiences, with the rest being skeptical about the security of technology-based transactions (Eren, 2021). Deloitte's 2021 Global Banking Consumer Survey found that around 60% of consumers believe it's essential for banks to offer seamless digital experiences, demonstrating the critical link between electronic banking and satisfaction (Deloitte, 2021). A global survey conducted by McKinsey in 2020 indicated that 73% of customers who use digital banking services are more satisfied compared to those who rely solely on traditional banking methods.

In Africa, mobile banking and mobile money services have had a pivotal impact in expanding financial inclusion and banks have invested heavily in digital services as a cost cutting and service enhancing strategy (Jibril, et al., 2020). This can be confirmed by the World Bank (2021) which reports that sub-Saharan Africa has the highest percentage of individuals holding

mobile money accounts in the world, demonstrating a high degree acceptance of these technology solutions (Abdi, Hussein, & Kadir, 2022). In South Africa, a 2021 survey by Consulta found that 73% of banking customers who used digital services reported higher satisfaction than traditional banking. Complaints resulted from mobile banking fraud and vishing while ATM cases dropped from 8% in 2021 to 5% in 2023, despite fewer customers using the channels (Keramati et al., 2018). Keramati et al. (2018) assert that complaints about e-banking services vary across the different banks with some receiving more complaints regarding their security and reliability than others.

In Kenya, the adoption of mobile banking, especially through services like M-Pesa, has been a game-changer and transaction data from two of the largest banks in the country, Equity Group and Co-operative Bank of Kenya reveals that currently, digital channels account for more than 95 percent of all transactions (Odhiambo, 2017). As per the 2021 FinAccess survey, 87.8% of the customers prefer conducting their financial transactions through mobile banking, 23.3% through online banking and 16.85% through ATMs. Point of sale transactions accounted for less than 10% of all transactions, reflecting their low rate of adoption. Safaricom's M-Pesa had over 43 million active customers in Kenya in 2022, and it significantly contributed to the increase in financial inclusion and customer satisfaction (Odhiambo, 2017). Kipng'etich, Chepkilot and Koima (2018) confirm customers are shifting towards mobile banking because it is cheaper, easily accessible and easy to use. However, customer complaints have emerged with regard to identity theft, fraud, authentication attack, phishing and vishing attacks, as well as agent-driven fraud (Mwangi, Ratemo, & Musumba, 2023).

Electronic banking services are instrumental pillars of the society, offering financial services as well as streamlining the payments and trade (Asuquo & Ezekwe, 2020). However, as more financial institutions offer their services over digital technology, they continue to collect huge amounts of data, both personal and non-personal and Jibril et al. (2020) confirm that improper management of this data could lead to financial losses and increased dissatisfaction among e-banking users. Understanding the how these new technologies influence customer's satisfaction is important to ensuring banks keep their customers satisfied and loyal (Indriastuti, et al., 2022). This includes understanding how security factors of the e-banking application being utilized influence customer's satisfaction. This research aims to delve into these intricate relationships, analyzing how electronic banking practices influence customer satisfaction among commercial banks, in Kenya, and how security factors affect this relationship.

1.1.1 Electronic Banking

Definitions of electronic banking abound in literature. Khan (2017) defines electronic banking as a type of remote banking service offered by accredited banks or their agents via equipment that is either directly managed by the bank or is subject to an external arrangement. Rajasulochana et al. (2022) assert that electronic banking involves the utilization of electronic and telecommunication networks to offer different banking services and products, enabling customers to access their accounts and perform various transactions using their computer or mobile phone. Shankar and Jebarajakirthy (2019) noted that electronic banking was initially utilized to provide information about banking services; however, contemporary customers are now utilizing it as both an informational and transactional medium, experiencing a broad range of banking services.

Electronic banking comes in various forms. According to Mia et al. (2017), E-banking includes Automated teller machines, electronic funds transfer, point of sale (POS), home banking, telephone banking, plastic card, and internet banking among others. Saroy et al. (2023) listed internet banking, mobile banking, ATMs, debit and credit cards, and electronic fund transfers as the main components of electronic banking. Odhiambo and Ngaba (2019) summarized E-banking measures as automated teller machines, online banking and mobile banking. In Kenya, the FinAccess Survey (2021) confirms that 87.8% of the customers prefer conducting their financial transactions through mobile banking, 23.3% through online banking and 16.85% through ATMs. Point of sale transactions accounted for less than 10% of all transactions, reflecting their low rate of adoption. Due to their popularity, this study focused on these three forms of e-banking; mobile banking, online banking, and automated teller machines.

Customers use digital devices to carry out financial transactions using internet banking, an electronic payment system, on a secure website run by the financial organization (Rajasulochana et al., 2022). Rajasulochana et al. (2022) assert that customers use laptops and mobile devices to check their account balance, analyze transaction history, pay bills, transfer payments, and many more financial activities. Online banking refers to the use of web-based platforms and internet services to access and manage bank accounts, make transactions, and conduct various banking activities through a computer or other internet-connected devices (Al-Rfou, 2013). This variable can be measured by reviewing the frequency and duration of customer logins to their online banking accounts, examining the types and frequency of transactions conducted online, including transfers, bill payments, and account balance checks

and gathering data on user satisfaction with the online banking platform through customer feedback surveys, usability testing, or Net Promoter Score (NPS) surveys *.

Zewge, (2021) defines mobile banking is a form of electronic banking that enables customers to access their accounts and perform transactions using their mobile devices. This service is provided through mobile applications provided by a financial institution or through text messages (Khatoon et al., 2020). Mobile banking refers to the use of mobile applications or platforms provided by commercial banks for conducting banking transactions and activities via mobile devices, such as smartphones and tablets (Alsmadi et al., 2022). Mobile banking can be measured by how often customers use their mobile banking apps and can be quantified by tracking the number of logins, transactions, or interactions within the app over a specific time period (Gitau, 2018). This can also be measured by examining which specific features within the mobile banking app are used and at what frequency (Wewege et al., 2020). Common features and digital banking trends include fund transfers, bill payments, balance inquiries, and mobile check deposits. Finally, customer feedback surveys can be conducted to collect customer feedback regarding their mobile banking experience (Alsmadi et al., 2022).

ATMs, or automated teller machines are computerized banking devices that let users conduct various transactions including letting users check their balance, make deposits, withdraw cash (Sadiku, et al., 2022). ATMs are available 24/7 and provide customers with the convenience of accessing their funds at any time. Fitriyani et al. (2020) confirm that innovations have also been made to ATMs to allow bill payments, fund transfers, and more services. ATMs enable bank customers to carry out various financial transactions with ease and increased convenience, which should be a source of satisfaction. Studies evaluating ATM banking operationalize it as the total number of ATM transactions per customer over a specified time period, or determining the proximity of these devices to customers' homes or workplaces (Saroy et al., 2023; Suleiman, & Yasir 2022). These will be used in this study.

For purposes of the current study, electronic banking was measured in terms of mobile banking, online banking and automated teller machines (Ayinaddis, Taye, & Yirsaw, 2023). Data from KNBS (2018) reveals that these are the most commonly used forms of electronic banking channels used by Kenyans to access banking services. These also appear in the studies by (Abdi, Hussein, & Kadir, 2022; Arilesere, et al, 2021; Odhiambo & Ngaba, 2019). Moreover, Odhiambo (2017) considers them to be easily accessible, easy to use and affordable, and as a result, should increase customer satisfaction.

1.1.2 Customer Satisfaction

According to Angusamy et al. (2022), customer satisfaction is a critical index for evaluating the performance of businesses, particularly in the banking sector, and a major factor for these financial institutions to remain competitive in today's market. Tadesse and Bakala, (2021) also asserted that customer satisfaction is a crucial concept in the field of marketing, which connects the purchasing process with post-purchase behaviors like attitude change, repeat purchases, and brand loyalty. Similarly, according to the definition given by Calvo-Porrall and Otero-Prada (2021), satisfaction refers to a subjective evaluation made by a consumer after using a product or service, which is based on their emotional response. In the context of digital banking, researchers Hammoud et al. (2018) used the SERVQUAL model in analysis of the relationship between e-banking and customer satisfaction, with e-banking features of reliability, responsiveness, speed, and security being highlighted as the main determinants of customer satisfaction.

Indrayani et al. (2019) emphasized that customers can be satisfied or dissatisfied with the services they receive through banking channels. They determined that there are four ways to gauge client satisfaction: ghost shopping, lost consumer analysis, complaints and feedback systems. These mechanisms can be used to gauge the number of customers who feel satisfied or dissatisfied with the services they receive (Indrayani, et al., 2019). They confirmed that companies have to provide comfortable and convenient opportunities for customers to provide feedback and take action on that feedback to improve customer satisfaction. Zewge (2021) concedes that the reliability, transaction efficiency, security, user-friendliness, and customer control over transactions are among the main factors affecting customer satisfaction with m-banking platforms. The researchers used these factors as measures to evaluate how satisfied customers are with the bank's E-banking services.

According to Alawaneh et al. (2018) avers that customer satisfaction is usually measured using a survey that comprises a series of statements scored using a Likert scale. Customers are satisfied when they give positive reviews, recommendations, and are willing to make repeat purchases (Susanto, et al., 2023). This study will use these variables as used in the study by Alawaneh et al. (2018) and Angusamy, Yee, and Kuppusamy (2022). The choice of these measures is informed by the fact that customers who are satisfied are likely to maintain loyalty to the firm by making repeated purchases and even recommend the products to other users.

1.1.3 E-banking Security

Internet banking services occur in highly insecure environments where customer's personal data and identity can be accessed by unauthorized actors who have devised multiple ways to steal customer's data. E-banking security can be defined as the bank's ability to instill measures to protect customer's personal information from unauthorized access (Usman, et al., 2020). Ayinaddis, Taye, and Yirsaw (2023) consider it to be the customer's perceptions about the degree of safety in transaction networks, data and platform security. In the banking domain where customers are increasingly aware and concerned about how their data is collected, stored, and used, a bank's ability to ensure customers they can guarantee the security of customer's accounts, transactions data, and money is essential to customer trust and loyalty. According to Eren (2021), a high degree of online banking security is one of the messaging bankers use to attract customers to digital channels, with customers being assured that unauthorized persons cannot access their accounts and identification data.

Bank customers expect their banks to safeguard their data and respect their privacy and security factors have been confirmed in many studies to influence customer's satisfaction and intention to use e-banking services. Usman, et al., (2020) explain that e-banking security is also important to banks as it helps them protect their digital devices, user data, avoid online scams, and protect their reputation. In the case of cyber-security, Zeshan Naz (2023) added that e-banking security is also key to enabling banks identify, address and recover from online attacks. The PACE (2022) report confirmed that while 69% of bank customers are satisfied with their digital banking experience, application breakdown, network failures, and fraud are among the main causes of dissatisfaction with e-banking (Eren, 2021). Security can be indicated by the network security protocols, encryption packets, and username authentications (Ayinaddis et al. 2023), or privacy, authentication, integrity, and non-repudiation (Usman et al., 2020). For measuring security, this study will use the indicators provided by (Usman et al., 2020) and (Ayinaddis et al. 2023).

1.1.4 Commercial Banks in Kenya

Commercial banks play a crucial role in Kenya's financial system by offering a broad variety of financial services to the public sector, enterprises, and individuals. The Central Bank of Kenya (CBK) oversees the regulation of commercial banks in Kenya, and the banks are classified into three tiers based on the scale of operation, size, and complexity of services offered (Central Bank of Kenya, 2022). 39 commercial banks were operational in Kenya as of 2024 (Central Bank of Kenya, 2024). Twenty local commercial banks, seventeen international financial institutions, and two local state banks made up the majority of the financial

institutions allowed to operate in the country (Mugambi, 2022). They provide an extensive selection of services and goods, such as investment banking, asset management, insurance, and banking for individuals and businesses. They have a significant market share and are the primary providers of credit to the Kenyan economy. These banks are also essential to the nation's economic growth and development since they lend money to a variety of industries, including manufacturing, infrastructure construction, and agriculture (Mugambi, 2022).

As e-banking has become increasingly popular in Kenya, commercial banks have invested heavily in digital channels in comparison to other financial firms to offer their customers convenient and efficient banking services (Kinyua, 2018). With increased competition, they will have to ensure these new forms of service delivery are effective and efficient, and have the ability to meet customer expectations. With the large customer base that they possess, banks provide a great scope in providing insights into how customers are using these services and how they are impacting customer satisfaction. This research therefore examined the influence of e-banking on customer satisfaction among commercial banks in Nairobi County, Kenya.

1.2 Statement of the Problem

Customer satisfaction is a central concern for the banking industry, as it reflects the quality of services and directly impacts customer loyalty and retention (World Bank Group, 2020). In recent years, the competition between banks and their resolve to provide better services, enhance customer convenience and retain customers, have led widespread adoption of electronic banking services (Mutiso, 2018). By December 2022, 96% of commercial banks had either developed or implemented a mobile banking solution (USSD or app) to help with client interaction and banking administration (Central Bank of Kenya, 2022). However, even with the high adoption rates, the CBK (2022) report indicates that only 56% of bank customers were satisfied with the services they received in 2022. Usman et al., (2020) and Mugambi (2022) add that a large group of customers are still reluctant to use internet services owing to security concerns. As these financial innovations continue to permeate the banking sector, it is important that banks ensure their customers concerns are addressed.

Various studies have explored the relationship between e-banking and customer satisfaction such as (Angusamy, et al., 2022; Gautam & Sah 2023; Reddy 2021). However, these studies fail to inform of the Kenyan situation having been focused on more developed countries such as Simmers, et al. (2022) whose analysis was comparative in nature and compared satisfaction determinants between the U.S. and China, or Angusamy, et al. (2022) and Ayinaddis et al. (2023) whose studies were on the properties of e-banking while the current specifies the

different e-banking products. This presents a conceptual gap. Rupal and Singh (2023) and Usman et al., (2020) also offer conceptual gaps having used customer's characteristics such as gender, education and earnings as the moderating variable while the current will use e-banking security as the moderating variable. Moreover, Angusamy, et al., (2022) did not use a moderating variable and used e-banking security as an independent variable.

The study by Rajasulochana (2022) was also comparative in nature, comparing the satisfaction of customers with e-banking services offered in public and private sector banks. The current study does not distinguish between bank type and focuses on all banks. Methodologically, researchers Rupal and Singh (2023) and Alsmadi, et al., (2022) limited their analysis to a review of secondary literature while the current collects primary data. Another gap lies in the conceptualization of the variables whereby researchers such as Virginie and Victallice (2023) used privacy, web design and convenience as indicators of customer satisfaction, while the current used positive reviews, recommendations, and repeat usage as indicators of customer satisfaction. This study differed from these studies in that it focused on banks in a developing country and evaluated the most popular e-banking products and services. Moreover, it collected primary data from e-banking customers and used e-banking security indicators as the moderating variable. This will be important as it will show how e-banking features can impact the relationship between e-banking and customer satisfaction.

1.3 Objectives of the Study

The main aim of this research was to determine the influence of electronic banking on customer satisfaction among commercial banks in Kenya

1.3.1 Specific Objectives

- i. To establish the effect of mobile banking on customer satisfaction among commercial banks in Kenya.
- ii. To determine the influence of online banking on customer satisfaction among commercial banks in Kenya.
- iii. To establish the influence of automated teller machines on customer satisfaction among commercial banks in Kenya.
- iv. To determine the moderating effect of e-banking security on the relationship between e-banking and customer satisfaction among commercial banks in Kenya.

1.4 Research Questions

- i. What is the effect of mobile banking on customer satisfaction among commercial banks in Kenya?
- ii. What is the influence of online banking on customer satisfaction among commercial banks in Kenya?
- iii. What is the influence of automated teller machines on customer satisfaction among commercial banks in Kenya?
- iv. What is the moderating effect of e-banking security on the relationship between e-banking and customer satisfaction among commercial banks in Kenya?

1.5 Scope of the Study

This study's geographic focus was on all 39 commercial banks that are located and operate in Kenya. Contextually the study focused on how mobile banking, online banking and ATMs influence customer satisfaction among commercial banks in Nairobi County. The study adopted ease of use, ease of accessibility, convenience and digital wallets as indicators of mobile banking, ease of use, ease of accessibility, convenience, and online budgeting tools as indicators of online banking, ease of use, ease of accessibility, convenience and instantaneous withdrawals as indicators of automated teller machines, and data encryption, cyber security protocols and password policies as indicators of security, the moderating variable. The study also used positive reviews, recommendations, and repeat customers as the main indicators of the dependent variable, customer satisfaction. The study adopted a descriptive research design that drew on the technological acceptance model, and the technology threat avoidance theory. The population of the study was members of the public who are customers of banks and hold a deposit account in any of the 39 operational commercial banks. The time scope for the study was between February and May 2024.

1.6 Significance of the Study

The study will provide insight into the connection between e-banking and customer satisfaction. It is anticipated that the findings of the study were informative to a variety of stakeholders.

This information will be of help to policy makers who will get a better understanding of the needs and expectations of consumers regarding the factors that influence their satisfaction with digital banking services. This information can be used to identify best practices and areas for improvement in the design and delivery of e-banking services, ultimately leading to better

customer satisfaction and experience. By examining privacy and security concerns, the findings of this study will also provide useful information to policy makers on the issues pertinent to financial services in a digital economy.

This study will provide information that should be of value to bank managements competing in highly dynamic environments. Specifically, the study will highlight current customer concerns and perceptions, information that was important to the design and delivery of financial products and services. Moreover, this study can also provide a deeper understanding of the factors that influence customers' decisions to adopt or avoid e-banking services and the relationship between these factors and customer satisfaction. This information can be used to design targeted marketing and promotional campaigns to encourage adoption of e-banking services among customers who may be hesitant to use them. Furthermore, as banks continue to expand use of e-banking applications, the findings of the study was informative to managers seeking to expand the services they offer though digital channels and to those who are yet to ensure certain features are present in their digital platforms.

This study will contribute to research by establishing the factors affecting customer satisfaction with e-banking from multiple theoretical perspectives, including linking the TAM and the Technology Threat Avoidance Theory which are important in understanding IT user's satisfaction and continued use intention. This study was an important reference material to scholars examining IT satisfaction determinants and its suggestions can be important to these scholars as they explore IT satisfaction determinants in other sectors and from different perspectives under different control variables.

1.7 Chapter Summary

The chapter introduces the background information on electronic banking, customer satisfaction, and the commercial banks in Kenya. The study then developed the problem statement which highlights the key gaps to be covered by this study. Research objectives, research questions, justifications for the study, its scope and significance are then discussed.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter examined the theories that served as the study's anchor as well as the empirical literature that was selected in accordance with the study's objectives. The conceptual framework and the operationalization of the study variables were also provided in this chapter.

2.2 Theoretical Review

A researcher's choice of theory to guide their study is known as a theoretical framework (Adams, Khan, & Raeside, 2014). Therefore, a theoretical framework is the application of a theory, or a collection of ideas derived from the same theory, to provide insight into a specific phenomenon or research question, or to provide an explanation for an occurrence (Stahl, Björkman, & Morris, 2012). The study will be anchored by the technology acceptance model and supported by the technology threat avoidance theory.

2.2.1 Technological Acceptance Model (TAM)

The Technology Adoption Model was developed by Davis (1989) and has been frequently applied to forecast and explain user adoption of information technology. The model explains how information system users usually accept and then employ new technology, according to Davis et al. (1989). According to Davis (1989), there are two main factors which determine how well an individual will accept a new technology: perceived usefulness (PU) and perceived ease of use (PEOU). PU was defined as the degree of value that an individual expects to gain by using a particular information system. In the workspace, it is the degree to which an individual believes a technology will enhance their job performance. Empirically, Suleiman and Yasir (2022) confirm that people are more likely to use applications which are helpful and improve their performance. Ahmad, Bhatti and Hwang (2020) aver that the concept of perceived utility influences people's attitudes, intentions, and actions when using a technology.

Davis (1989) defined perceived ease of use as the level at which an individual believes that an information technology will not be complicated to use. Easy to use technologies require little mental, financial and cognitive effort and Jawad et al. (2022) confirm that users are more likely to adapt such technologies. The recommendation to increase the technology's uptake is for developers to make their technologies as easy to use and access as possible. While initially developed to forecast technology acceptance and use in the workplace, it has been used in analysis of the acceptance factors for smart ATMs (Sharma, Sharma, & Khan, 2019), mobile banking (Widanengsih, 2021) and e-payment (Jawad et al., 2022). Mutahar et al. (2022)

extended the perceived risk variable to the TAM in analysis of customer's intent to utilize mobile banking in developing countries while Kumar et al. (2023) included perceived risk and perceived trust as moderating variables in analysis of factors predicting intention to use mobile banking services. The implication from these studies is that customer's intention to adapt a new financial technology is influenced by their satisfaction and trust with it.

While the theory may have been used extensively, it has been criticized previously for failing to account for the behavioral change in users (Ajibade, 2018). According to Ajibade (2018), the model relies on two main constructs, which means that it can only explain about 40% of the changes in technology use as it neglects other factors such as cost and social influence on technology use. Despite these criticisms, the model provides a useful framework from which to assess individual decision to use a new technology. The model's weaknesses will be addressed through incorporating the Technology Threat Avoidance Theory which will introduce constructs such as security that are not identified in the TAM as technology acceptance drivers. Ahmad et al. (2020) used the theory in the analysis of cognitive and behavioral aspects of customer satisfaction with e-banking and confirmed that it links factors unique to the technology with satisfaction and continued use. This study seeks to use the theory in a similar way and carry out an assessment of how factors of ease of use and convenience of use influence customer satisfaction with e-banking channels.

2.2.2 Technology Threat Avoidance Theory

The Technology Threat Avoidance Theory (TTAT) was proposed by Liang and Xue (2009) as they attempted to augment our understanding of the factors that cause reluctance to accept or engage in a new technology/innovation. According to Liang and Xue (2009), an individual's perceptions of his/her susceptibility (vulnerability) to online threats influences their motivation and intention to use a net innovation. The implication of the TTAT is that adoption rate of new innovations is a function of the user's perceived effectiveness, perceived cost and self-efficacy, with these factors impacting their technology threat awareness (Lee, Lim, & Lim, 2023). TTAT posits that users are motivated to avoid malicious technologies and will address these threats by taking safeguarding measures. Essentially, customers will actively avoid a technology that they perceive to be too risky and costly and select the safer, more reliable alternative (Gao, et al., 2023).

The TTAT can explain the slow pace of adoption of e-banking in developing countries, particularly in Sub-Saharan Africa where customers are increasingly aware of the threats associated with conducting online financial transactions (Lee, et al. 2023). Liang and Xue

(2009) confirmed that user's threat assessment will impact their adaptive behavior and that individuals who believe they are susceptible to malicious actors will have a negative coping evaluation and avoid the technology. The analysis by Gao et al. (2023) determined that user's information vulnerability increases their fear of IT services which in turn reduces their intention to use the technology and Jibril et al., (2020) ascertained that fraud, cybersecurity, phishing, online identity theft and other risks associated with e-banking reduce willingness to use e-banking systems in Ghana.

Lee, et al. (2023) used the TTAT with behavioral theories and revealed that information seeking and awareness of online financial scams increases security and privacy concerns and intention to use e-banking technology. Critics of the TTAT argue that there is limited empirical support for the influence of threat susceptibility and severity on threat perception and avoidance. Gao, et al. (2023) add that the theory focuses too much on individual rationality and fails to account for individual traits such as risk propensity, risk perception and distrust on technology use. Despite this, the theory provides a useful means through which one can get a better understanding of individual IT threat avoidance behavior. It predicts that customer's willingness to engage with e-banking depends on their perceptions of security when conducting digital transactions, and that satisfaction will result when the customers are assured of the completeness and security of their data (Aribake & Aji, 2020; Jibril, et al., 2020). Therefore, this study used the TTAT to anchor the mediating variable; e-banking security. Expectations are that reducing information vulnerability, providing security features and ensuring the financial transactions are completed transparently, without any hitches or outside interference addresses customer's concerns and increase their satisfaction.

2.3 Empirical Review

This section provided literature related to electronic banking and customer satisfaction. Specifically, it focuses on mobile banking, online banking, Automatic Teller Machines and their influence on customer satisfaction.

2.3.1 Mobile Banking and Customer Satisfaction

Mobile banking is an innovative financial product whereby financial institutions cooperate with mobile phone operators to offer various financial services through a mobile device (Arilesere, et al., 2021). It is among the most significant technological innovations in the modern economy as it enables customers to perform important functions such as performing balance checks, account transactions, payments, credit applications and other banking

transactions at their convenience and at affordable costs. Odhiambo (2017) notes that through mobile banking, customers can access basic banking services anywhere and at all times.

Power (2020) research found that customer satisfaction is significantly impacted by mobile banking. The convenience of accessing banking services through mobile devices has made customers more satisfied with their banking experiences. When it comes to their banking experiences, customers who use mobile banking are happier than those who do not. According to a survey conducted by Fiserv, 90% of customers who use mobile banking services are satisfied with their bank, and 87% of them are less likely to switch to another bank (Wewege, Lee, & Thomsett, 2020). This indicates that mobile banking has also improved customer loyalty since customers who use mobile banking services tend to have a stronger relationship with their bank, and they are less likely to switch to another bank.

In China, Yu and Nuangjamnong (2022) investigated the correlation between customer satisfaction and mobile banking services in China's financial sector. The study considered a number of variables, such as perceived risk, relative benefit, transaction speed, accessibility, cost, and flexibility. The study discovered that in the Chinese financial sector, mobile banking positively correlated with customer satisfaction. The study specifically found that consumer satisfaction is significantly impacted by the speed at which transactions may be completed through mobile banking, as well as accessibility, cost, flexibility, simplicity of use, and relative advantage. However, the survey pointed out that customer satisfaction levels are impacted by the disparities in technology and service standards among banks. The current research examined commercial banks in Kenya, whereas the previous study concentrated on the Chinese financial sector.

Alsmadi et al., (2022) looked into the impact of mobile banking applications on customer satisfaction in Morocco and found a negative but significant relationship. A poorly designed app with difficult navigation, slow response times, or limited features can lead to frustration and decreased satisfaction levels. The study further found that satisfaction levels were significantly higher among mobile banking customers who reported having an easy-to-use app. The study suggested that banks need to invest in the development of high-quality mobile banking apps to ensure a positive customer experience.

Locally, Tier-One Commercial Banks in Kenya were the subject of an investigation by Halima and Wepukhulu (2020) examining the link between different financial innovations and operational performance. Primary as well as secondary data sources were gathered for the

descriptive research, and inferential as well as descriptive statistical techniques were used in the analysis. The findings demonstrated that by eliminating the requirement for customers to visit bank branches, mobile banking reduced transaction costs while online banking provided unique goods and services and had lower operational expenditures. Further, mobile banking eased complications associated with transfer of funds between accounts and mobile banking increases service offering and facilitated corporate operations and ensured financial inclusion, as ATMs have reduced the cost of maintenance. This study looked into financial inclusion while the present study focused on customer satisfaction.

Githae, Muriuki, and Njeru (2018) looked at how Kenyan microfinance institutions' operational performance was affected by electronic banking, including apparatus-based and mobile banking. Results showed that mobile banking has a number of beneficial impacts, including enhanced client relationships, new product development, accessibility, operational efficiency, and satisfaction among customers. This study investigated microfinance firms while the current sought to provide evidence from banks. Moreover, it addressed customer satisfaction as opposed to operational performance which is more general.

2.3.2 Online Banking and Customer Satisfaction

Online/internet banking is a banking interface system that enables bank customers to perform bank transactions through the bank's website through computers and digital devices (Obbo, 2022). Online banking differs from mobile banking in that online banking permits customers to undertake more diverse financial transactions through interactive websites. Online banking offers loan applications, account transfers, balance inquiries, bill payments, and other personal requests (Nickel, 2018). Akhisar, Tunay, and Tunay (2015) report that internet banks have emerged as innovative business models for the banking industry where private banks offer purely online banking services. Akhisar, et al. (2015) note that internet banking adoption enables banks to reduce average operational costs and overhead physical expenses.

Hammoud, Rima, and Ibrahim (2018) conducted an investigation to examine the intricate relationships among customer satisfaction levels, the quality of online banking services, and overall service quality within the financial services sector in Lebanon. The research utilized survey data, which was collected through the administration of carefully designed questionnaires, to identify dynamics of customer experiences in the Lebanese financial landscape. The researchers used Amos version 20 in conjunction with SPSS to analyze the data. Findings from the study revealed that these channels make using financial services easy, efficient, and reliable as well as guarantee privacy and security which significantly improved

customer satisfaction. The study utilized quantitative measures of customer satisfaction while the current study used quantitative measures.

Sambaombe and Phiri (2021) used the TRA model and a cross-sectional design in analysis of the impact of Online Banking on Customer Satisfaction in Zimbabwe, confirming that more than 60% of customers persist on using traditional services. Binary logistic regressions were used and it was ascertained that internet banking was having an insignificant impact on customer satisfaction as customers were more concerned with digital costs and had a negative attitude towards the use of internet banking. The study highlights the importance of customer education, awareness and trust in e-banking services but in the context of Zimbabwean customers.

An empirical review was conducted by Auta (2018) to highlight the effectiveness of E-banking (online, mobile, ATM, and point-of-sale innovations) in the Nigerian banking industry. The investigation employed advanced statistical methodologies, specifically the Kaiser-Meyer-Olkin (KMO) technique and Bartlett's Test of Sphericity. These analytical tools not only facilitated the application of component analysis but also enabled the identification of independent features associated with e-banking. Findings were that e-banking provides flexible and convenient features, including transaction-related advantages like easy transfers, quick transactions, reduced fees, and time savings that increase satisfaction. The study, however, associated e-banking with lack of security given low data protection regulations. This study evaluated bank efficiency from the Nigerian context while this study evaluated customer satisfaction in the Kenyan market.

Kinyua (2020) explored the influence of internet banking on customer satisfaction in Kenya. The study findings concluded that online banking was associated with a significant increase in customer satisfaction compared to traditional banking methods. The study concluded that factors such as ease of use, reliability, and the convenience of conducting transactions online were found to be critical drivers of customer satisfaction. Customers reported higher levels of satisfaction when banks provided responsive customer support for online banking-related issues.

Arisa and Muturi (2018) investigated the implications of internet banking on the performance of financial institutions in Kenya in terms of financial and market growth. Despite being error-free, effective, and available around-the-clock, online banking does not significantly affect the financial performance of Kenya's commercial banks, according to the research analysis. The

study concluded that the country's generally poor network connections, inaccessibility of internet-enabled devices, and security concerns were the main factors affecting satisfaction with e-banking applications. This study evaluated financial performance while the current study was specific to customer satisfaction factors given certain approaches that enhance financial performance such as automation can be sources of dissatisfaction to customers who prefer face-to-face interactions.

2.3.3 Automated Teller Machines and Customer Satisfaction

An Automated Teller Machine is a computerized telecommunication device that enables bank customers to financial services in a public space without the need for a cashier, human clerk or bank teller. Bochaberi and Ong'era (2020) confirm that ATM machines mainly provide paper-based payout but offer many services when customers have an ATM card which they use to access bank services. ATM machines serve as physical access points for customers and banks can handle large cash withdrawals since the cost of ATM transactions is far less than transactions at the branch teller. Malik (2014) links ATMs with customer satisfaction and financial deepening among commercial banks.

Saroy, et al. (2023) conducted a study on the role of Automated Teller Machines (ATMs) in shaping customer satisfaction among residents of Mumbai, India. According to an analysis of the study's findings, ATMs significantly impacted how satisfied customers were. The survey also showed that a major element affecting consumer happiness was ATM accessibility while proximity to ATMs and extended operating hours contributed to higher satisfaction rates. Customers who used ATMs for routine transactions, such as cash withdrawals, were more satisfied with their banking experience. Security measures, such as well-lit ATM locations and surveillance, were also positively associated with customer satisfaction. The study was contextualized on the Indian financial sector while the current study examined the Kenyan financial sector.

Obbo (2022) conducted a survey of bank customers in Uganda, collecting data on their usage of ATM and agency banking services and their satisfaction with the services offered. The results of the study's analysis suggested a significant positive association between the frequency of ATM usage and customer satisfaction. Customers also reported higher satisfaction levels when using ATMs and agency banking for tasks such as withdrawals and deposits. The user-friendliness of ATMs was also found to be a significant factor in enhancing customer satisfaction.

Kazeem (2021) sought to understand the relationship between agency banking and ATM usage on customer satisfaction in Nigeria. The study used a descriptive design and collected data from Point of Sales (POS) operators and customers and regressions were applied in analysis which revealed that there is a significant positive correlation between ATM usage and satisfaction with banks' services. The study also concluded that ATMs cut down on operational expenses, increasing revenues for commercial banks while saving clients' time waiting in lines. According to the research findings, commercial banks should improve the ATM system to enable consumers to access all banking services. These findings were examined in the case of mobile and online banking services.

Confirming that ATMs were introduced to reduce queues in banking halls and bring financial services closer to the people, Suleiman and Yasir (2022) sought after the ATM service quality dimensions that influence customer's perceptions in Nigeria. The study used SEM and confirmatory factor analysis and findings were that ATM service dimensions of reliability, responsiveness and tangibility all have significant effects on customer satisfaction in Nigerian banks. Improving service quality dimensions and security was shown to be essential to addressing customer's negative perceptions of fraud and cloning of ATM cards and increasing their satisfaction.

On the other hand, Asuquo and Ezekwe (2020) assert that ATM technologies are having significant negative influences on customer satisfaction among Ghanaian banks. The study collected data from six of the largest deposit money banks in the country and relied on descriptive and inferential statistics in analysis of customer's perceptions and findings were that many of the customers experienced difficulty withdrawing cash, inadequacy of cash, trapped ATM cards, and slow resolution of ATM-based complaints. These factors were having significant negative impacts on customer's satisfaction and have to be addressed to increase user adoption and satisfaction with ATM channels.

Nanyanzi (2021) examined the effect of ATM adoption on customer satisfaction with banking services at Centenary Rural Bank in Uganda, specifying the effect of the cash dispenser's perceived ease of use and perceived usefulness on customer satisfaction. The study used a descriptive research design and a mixed methodology and regression analysis results were that ATMs were increasing the ease of access and use of financial services which increased the satisfaction of rural users. The bank's customer sensitization was found to influence perceptions of ATM's perceived usefulness, ease of use and intention to use teller machines and recommendations were for the bank to provide constant security at ATM points, locate the

machines in convenient access points and to re-design ATM system user inter-faces to reduce errors and increase customer confidence in the new technology. The study used a case study design which the current examined multiple banks.

With customers still queuing in banks despite increased access to alternative banking channels, Mugambi (2022) used a cross-sectional ex-post facto research design that relied on regression analysis in examination of customers' adaptability to alternative banking channels. Findings of the study were that many customers are resistant to new technologies due to limited awareness of the value of the channels, perceptions of digital service costs, and due to perceptions that banking halls are more secure to conduct financial transactions. Recommendations were that banks have to intensify awareness campaigns, locate ATM machines and agents in secure, accessible locations and ensure digital costs are not excessive. Conclusions were that it is paramount that customer's negative perceptions be overhauled to increase these channels' usage.

2.3.4 Security as a Moderating Factor on E-banking and Customer Satisfaction

The increased perforation of digital technologies has resulted in a new class of digital crimes and increased security risks to do with risk of financial and information loss to scammers and online fraudsters (Indriastuti, et al., 2022). Moreover, many banks develop digital platforms that are riddled with glitches and are prone to crashing, factors cited by customers as nuisances that are unique to electronic financing services (Nanyanzi, 2021). Currently, customers have to consider illegal personal information access, storage issues, and unlawful disclosure of location when using e-banking applications and as per annual cybercrime reports, financial institutions and their customers lose up to 6 trillion dollars to online fraudsters. Based on these observations, it stands to reason that increasing the security, reliability and privacy of e-banking channels would alleviate these concerns and in turn eventually intensify the customer satisfaction level. Therefore, delivery of proper security and privacy measures is essential to changing customer's perceptions about e-banking services (Sundaram, et al., 2019).

The effect of security, privacy and trust on customer satisfaction with digital services can be explained by the technology threat avoidance theory which asserts that technology user's threat awareness has significant impacts on their usage or avoidance behavior (Jibril, et al., 2020). Specifically, users who perceive a technology to be a threat will take safeguarding avoidance behaviors, implying that one's ability to assess a threat and their perceived ability to address the risks associated with the technology will influence their adaptive behavior. Empirically,

findings from Obbo (2022) reveal that many bank customers have a negative perception of the security of e-banking technology and still prefer traditional banking, resulting in long queues despite easy and convenient access to ATMs. Similarly, Aribake and Aji (2020) reveal that an increase in Phishing attacks has damaged customer's satisfaction, trust and intention to use internet banking, resulting in phishing avoidance behavior.

Gao, Guo and Jiang (2023) evaluated the effect of customer security perceptions of facial recognition payment technology on customer's satisfaction with financial services in China using elements in the technology threat avoidance and information boundary theory. The study sourced data from two e-payment platforms and empirical analysis revealed that customer's perceived information vulnerability increases their fear of financial losses and reputational damage, which in turn, reduces their satisfaction and intention to continue using the system to make payments. The study findings imply that while facial recognition payments increase convenience, it is paramount that the service providers ensure they provide adequate assurance that customers' facial information is not accessed by unauthorized parties. These factors were examined with relation to e-banking services and customer satisfaction.

Indriastuti et al. (2022) demonstrated the importance of customer's trust in e-banking services on their satisfaction in research that specified the mediating effect of e-trust in digital services on customer satisfaction among e-bankers. The study used a descriptive design that relied on PLS (Partial Least Square) in analysis which revealed that e-service quality dimensions (accessibility and efficiency, assurance-fulfillment, privacy, and responsiveness) and e-trust are significant determinants of satisfaction with e-banking. It was ascertained that aside from offering quality online services, banks have to provide quality websites with adequate security features, complaint, customer feedback and follow-up facilities, as well as address privacy issues to increase e-trust given e-trust is essential to peace of mind and assurance.

Afroze et al. (2021) examined the factors leading to customer satisfaction and loyalty with e-banking services offered by Islamic banks in Pakistan, specifying the moderating role of E-banking channels' reliability and security. The study used a descriptive research design and regressions in analysis which revealed that despite the e-banking services increasing the ease of access of financial services, banks can increase customer satisfaction by ensuring their services are reliable and free of bugs, crashes, dangers and threats from external actors. The study observed that customers lose confidence and are less likely to be loyal when they hear negative reports of data breaches and failure of digital devices to complete digital transactions. Conclusions were that reliability and privacy variables influence frequency of usage and

deduced that popularity of different applications can be explained by customer's perceived reliability and security of the services. The study was cross-sectional in nature and carried out from Islamic contexts.

Usman et al. (2020) used SEM PLS in analysis of the effects of mobile and internet banking on customer satisfaction, specifying the role of e-banking service quality and security on customer's intention to re-use a digital service. Analysis of data from the State Bank of Indonesia revealed that performance and effort expectancy, alongside facilitating conditions, social influence and security facilitation have significant impacts on customer's perceptions and behavioral intention. Therefore, the observations were that aside from making e-banking channels easy to use, banks have to pay attention to customer's IT capability and provide support services, ensure the platforms are compatible, and online transactions are affordable and secure. Conclusion were that customers will only continue to use e-banking channels if they perceive them to be secure, private and reliable in delivering e-banking services and that banks have to upgrade privacy, authentication, integrity, and non-repudiation features in electronic transactions.

In India, Vijayanand (2021) sought after the impact of e-service quality on customer satisfaction with e-banking services offered by public banks, evaluating the moderating impact of privacy and security of transactions on customer satisfaction. The study conducted descriptive and inferential analysis and structural equation modeling and findings were that responsiveness, convenience and security all predict satisfaction with e-banking services. Recommendations were for banks to ensure they have secure systems, limited negative publicity and encourage use of alternative channels to increase customer's trust in the security features of their services. This study also failed to examine other factors that can influence customer satisfaction.

Regionally, Jibril et al. (2020) used the technology threat avoidance theory in analysis of the impact of online identity theft on customers' perceptions regarding e-banking transactions in Ghana. The research also used PLS-SEM in analysis that compared customer satisfaction from two commercial banks and findings were that incidences of online identity theft influence customer's fear of financial loss, reputational damage, and security and privacy concerns and that this perception negatively affects customer's satisfaction and intention to carry out e-banking transactions. The study confirmed that addressing the factors that can lead to avoidance behavior is instrumental to increasing satisfaction and intent to use online banking

transactions. The study was specific to online identity theft constructs and did not consider other factors that can be relevant to customers.

This review confirms that ease of use, usability and convenience are not the only factors that influence customer satisfaction, and that financial service providers have to ensure their products are offered in secure places, are reliable and can be trusted by the user. Indeed, customers are becoming more aware that their information is vulnerable to unauthorized parties, and that malicious parties can access weak networks and access their finances and information. These factors have been proven to increase frustrations with e-banking services and may have influenced the differences in adoption rates (Gao, et al., 2023). For instance, Aribake and Aji (2020) confirm that Nigerian customers are hyper aware of online scammers and phishing attacks and as such are actively avoiding certain digital platforms. Therefore, the security and reliability of digital systems can influence customer's satisfaction with the services they access. With Kenyan shifting to a cashless economy, understanding how reliability and security influences customer satisfaction with e-banking services was key to ensuring the customers remain satisfied and loyal.

2.4 Summary of Research Gaps

The studies reviewed provide important information regarding the impact of electronic banking factors on customer satisfaction with banking services. Despite their value, several research gaps can be identified. Contextual gaps emerged from the studies by Yu and Nuangjamnong (2022) who evaluated Chinese banks, Saroy, et al. (2023) whose study was from India and even Kazeem (2021) whose analysis was on the performance of commercial banks in Nigeria. The current study will be Kenyan-based. Methodological gaps can also be identified from studies such as Hammoud, et al., (2018) which relied on secondary data and used qualitative measures of customer satisfaction while the current study used quantitative measures of customer satisfaction. Conceptual gaps were also identified in the studies by Nyang'ate (2019) and Vekya (2017) which specified the impact of digital banking on bank performance while seeks to determine customer satisfaction. Arisa and Muturi (2018) also sought after banks' financial health while the current study specified customer satisfaction. Moreover, when looking into the indicators used in studies like Saroy et al. (2023) vary from the current study in that they only investigated one channel of electronic banking (ATMs) while the current study evaluated multiple forms of digital banking. This gap also emerges in the study by Obbo (2022) which evaluated the effect of ATM and agency banking on customer satisfaction. This study

sought to fill these gaps through focus on customers' use of mobile banking, online banking and ATMs and their impact on the satisfaction of bank customers.

Table 2.1 Summary of Research Gaps

Author	Title of study	Findings	Research Gap	How the current study addressed the gap
Yu & Nuangjamnong (2022)	The relationship between mobile banking service in the financial industry in China and customer satisfaction.	Mobile banking had a positive relationship with customer satisfaction in the Chinese financial sector.	Focused on the Chinese financial industry creating a contextual gap	The current study examined commercial banks in Kenya
Alsmadi et al., (2022)	The effect of mobile banking applications on customer satisfaction in Morocco	A negative but significant relationship between mobile banking applications and customer satisfaction	The study created a contextual gap by focusing on mobile banking use in Morocco's banks	The current study sought to fill by looking into multiple services offered by commercial banks in Kenya
Hammoud, Rima and Ibrahim (2018)	Examining the relationship between online banking services and the quality of services as well as customer satisfaction levels in the Lebanese banking sector	System availability has insignificant effects on customer satisfaction while reliability had the strongest relationship with customer satisfaction	This study was from Lebanon and examined factors such as loyalty that are not included in the current study	This study specifically focused on direct and indirect factors that influence satisfaction with e-banking services
Odongo, (2019)	Effect of mobile banking on customer satisfaction in KCB bank limited, Kenya	Mobile banking service has assisted greatly in improving various aspects of customer service delivery	The research was a case study based on KCB bank only and only one variable, mobile banking.	This study compared satisfaction with services offered by different commercial banks.
Gao, Guo and Jiang (2023)	Information vulnerability in facial recognition payment: An explanation of technology threat	Information vulnerability increases fear of financial losses and reputational damage, which in turn reduces intention to	This study evaluated financial payments services not necessarily	This study enhanced these findings by examining how faceless recognition e-

	avoidance and information boundary theory	use facial recognition payment services	offered by banks but by fintech firms	banking services affect customer's e-banking satisfaction in Kenya
Afroze et al. (2021)	Impact of privacy and security on e-banking loyalty: mediating role of customer satisfaction and moderation of reliability.	e-banking satisfaction fully mediates the link between e-banking privacy and security and e-banking loyalty	The study presents conceptual gaps as it examined customer satisfaction as a mediator variable while the current examines satisfaction as the dependent variable	This study specifically examined the antecedents of customer satisfaction with e-banking
Usman et al. (2020) used SEM PLS	E-Banking and mobile banking effects on customer satisfaction	Performance and effort expectancy influence customer satisfaction but reliability and security are the determinants of continued usage intention, an indicator of satisfaction	The study used cross-sectional data from India and PLS in analysis	This research applied correlation and regressions in analysis to establish the relationship between the variables

Source: Researcher (2025)



2.5 Conceptual Framework

A conceptual framework follows the input-process-output paradigm of a study and is a textual or visual relationship between several variables that is frequently drawn from one or more theories (Saunders, Lewis & Thornhill, 2019). The conceptual framework of the current study was to determine how electronic banking and consumer satisfaction interacted within Nairobi County's commercial banks.

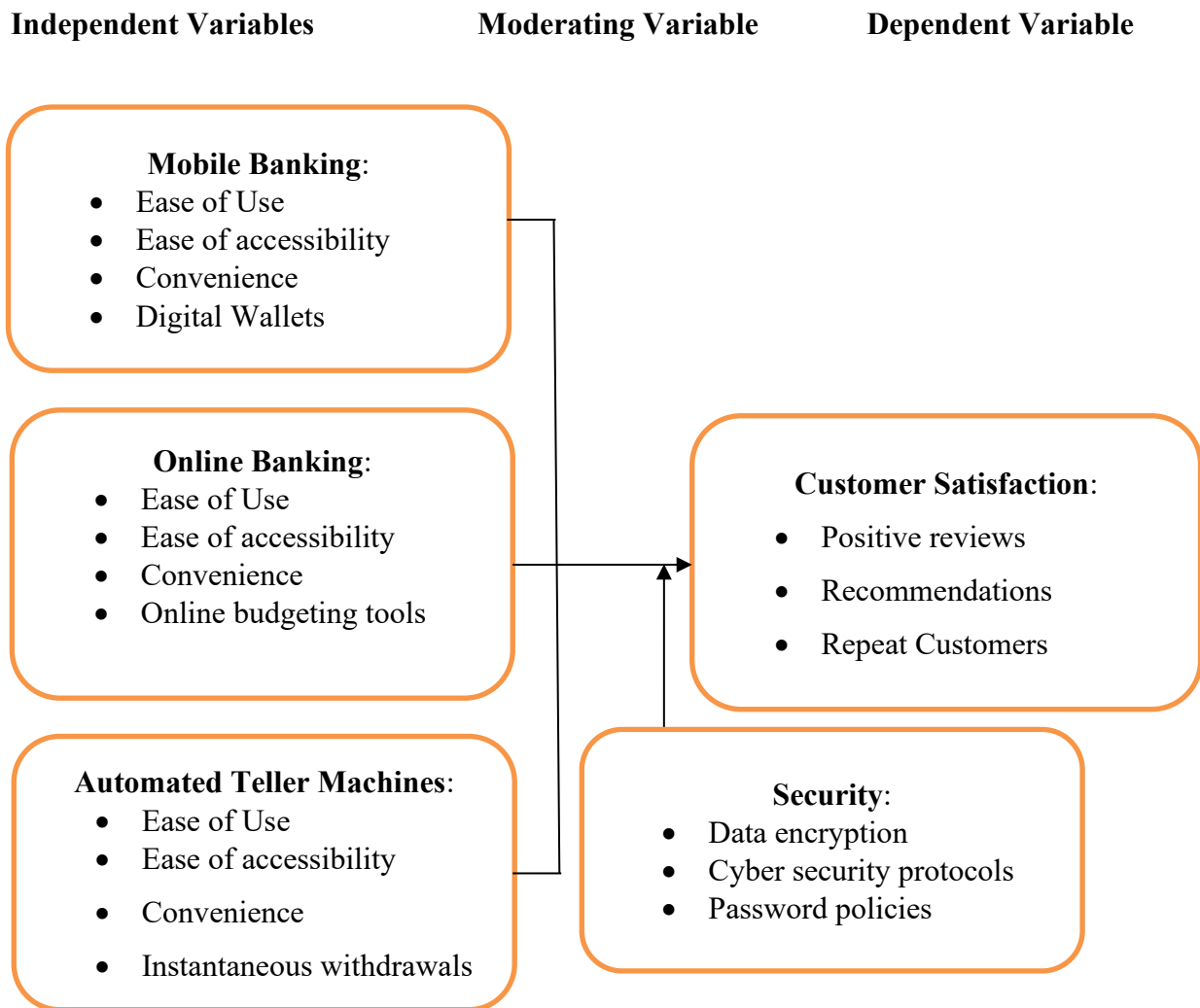


Figure 2.1 Conceptual Framework
(Source: Researcher, 2025)

The above conceptual framework identifies the conceptualized interaction between mobile banking, online banking and ATMs influence on customer satisfaction. Customer satisfaction is conceptualized based on measurable indicators and assessed using quantitative measures.

Table 2.2 Operationalization of Study Variables

Variable	Constructs	Measurement	
Mobile banking	Ease of Use Ease of accessibility Convenience Digital Wallets	5-point Likert scale questionnaire	Saroy et al. (2023)
Online banking	Ease of Use Ease of accessibility Convenience Digital Wallets	5-point Likert scale questionnaire	Rajasulochana et al. (2022)
Automatic Teller Machines	Ease of Use Ease of accessibility Convenience Instantaneous withdrawals	5-point Likert scale questionnaire	Sadiku, et al. (2022).
Security	Data encryption Cyber security protocols Password policies	5-point Likert scale questionnaire	Usman, et al., (2020)
Customer satisfaction	Positive reviews Recommendations Repeat Customers Patronage	5-point Likert scale questionnaire	Alawaneh et al. (2018) and Angusamy, et al., (2022).

(Source: Researcher, 2025)

2.6 Chapter Summary

This chapter has presented the theoretical foundations of the research and previous empirical literature evidence on how electronic banking affects customer satisfaction. The chapter then provided a summary of the gaps emerging from the literature reviewed and the conceptual framework.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In the third chapter, the study outlines the plan for solving the research problem. This includes discussing the research paradigm, design, target population, sampling strategy, and sample size. Additionally, we cover the selection of data collection tools, procedures, pretesting, and the approach for analyzing the collected data. This chapter provides a clear and detailed overview of the methodological approach employed in the study.

3.2 Research Philosophy

The research philosophy is the blanket body of knowledge that contains fundamental assumptions on how the study views the world or objects (Adams, Khan, & Raeside, 2014). By selecting an ideal philosophy, the analysis can construct a roadmap to solve the research problem and interrogate the subjects/data obtained (Bryman, 2016). There are four overarching research philosophies: pragmatism, interpretive, realism, and positivism. This research was grounded on a positivist philosophy that uses verifiable observations such as surveys or statistical analysis to determine the interaction between variables (Martin & Bridgmon, 2012). The study philosophy is vital as it ensures the purpose of the research or study is evident in the description of the phenomenon of the study (Blumberg, Cooper, & Schindler, 2014). By applying a positivist philosophy, one can undertake the research through a quantitative collection and data analysis concerned with testing hypotheses.

3.3 Research Design

Research design is the scientific arrangement or plan of the various steps people undertake while systematically investigating the problem (Bryman, 2016). The design can also be viewed as the action plan upon which the entire study is built; it dictates how an investigation is conducted and provides the road map of an examination (Blumberg, Cooper, & Schindler, 2014). This survey relied on a descriptive research design. This was ideal as it supports the collection of large amounts of data and utilizing quantitative approaches in the analysis. Further, the design supports the collection of responses from participants in their original setting and minimizes bias, thus providing a true reflection of the survey (Sekaran & Bougie, 2016).

3.4 Population of the Study

The research population is the finite or infinite number of individuals, elements, or objects that are of interest to a study (Sekaran & Bougie, 2016). The population in consideration should be ideal and able to provide the required information that can support answering the research problem and reflect the actual setting (Blumberg, Cooper, & Schindler, 2014). This study focuses on customer satisfaction in the banking industry; thus, the most suitable participants was holders of bank accounts in Kenya. According to the Banking Supervision report, there were 64,022,715 deposit accounts held across the large, medium, and small banks in Kenya (Central Bank of Kenya, 2022). The study targeted members of the public who hold a deposit account in any of the 39 operational commercial banks, as they can provide detailed information on how selected electronic banking channels have influenced their customer satisfaction.

3.5 Sampling Design

The sampling process is utilized in the research to select individuals from a particular group who was chosen as representatives (Bryman, 2016). Ensuring the correct sampling process is vital to providing an ideal sample since it supports the quality of inferences made by the researcher from the findings derived from the participants (Blumberg, Cooper, & Schindler, 2014). This study applied judgmental sampling in selecting respondents involved in the research. This ensured the researchers knowledge and judgement was used in choosing the participants who was considered in the survey thus ensuring only those who fit the required profile are considered in the study. The sample frame from the study was drawn from the holders of the 64,022,715 deposit accounts of the commercial banks. The sample size was calculated using the Krejci and Morgan table owing to the large sample size; thus, 384 account holders who form the respondents for this survey. The research included only public members who have an account and not consider any respondents who does not operate a bank account for the research.

3.6 Data Collection

The study focused on primary data. The primary data was collected using structured questionnaires. Using structured questionnaires ensures uniformity in the statements provided to the participants, and the responses are consistent (Bryman, 2016). The questionnaire was based on 5-point Likert scale questionnaires. The tool is also easy to administer when dealing with a large sample; thus, it was ideal for this research. The structured questionnaire was developed in line with the operationalization of the variables and informed by prior literature.

The questionnaire consisted of three main sections covering the profile of participants, the three selected electronic banking channels, and the customer satisfaction in commercial banks.

Section A looked at the respondents Demographic Information comprising their gender, age, highest education qualification, and number of years they have had their bank accounts. Section B contains questions regarding Electronic Banking channels and Customer Satisfaction where customers responded to statements on their perceptions about their satisfaction with electronic banking channels, the accessibility of electronic banking channels, the security and affordability of utilizing electronic channels. It also contains statements regarding customer satisfaction with Mobile Banking, Online Banking and Automated Teller Machines. The last section provides statements regarding customer satisfaction with e-banking services in Kenya.

The data collection procedures involve the various scientific steps undertaken when obtaining responses from the participants (Bell, Bryman, & Harley, 2022). First, the researcher reviewed the protocol for completeness with the help of the supervisor before seeking the approval of the institutional ethical review committee. Secondly, the research sought relevant license from the National Commission for Science, Technology, and Innovation before collecting data. The study relied questionnaires when collecting data through the drop and pick method. Google forms were used where customers preferred to respond to online channels rather than to the physical forms. Research assistants were contacted to assist in the data collection. Further, electronic tools such as Google Forms were designed to aid in collecting responses where the physical questionnaires would not be practical. The participant's consent was obtained before engaging their help in answering the research questions.

3.7 Research Quality

Research quality was ensured through establishing validity and reliability of the research instruments. Pretesting the research tool is necessary as it allows the study to assess the validity and reliability of the research instrument. For this purpose, the research considered a pretest of the study tool among 10% (n = 38) of members of the public who have an account in Kenyan banks (Sekaran & Bougie, 2016). The responses were used to support the validity and reliability checks of the instrument.

3.7.1 Validity Test

Validity is the extent to which the research findings accurately reflect the phenomenon being investigated (Sekaran & Bougie, 2016). The study utilized content validity to check how the various dimensions and concepts under investigation have been incorporated into the research tool (Bryman, 2016). This was conducted with the help of the supervisor to ensure that all the critical items operationalized are covered in the questionnaire. Secondly, the study conducted the KMO and Bartlett tests to check for sampling and construct adequacy, which was crucial in ensuring the study instrument is valid.

3.7.2 Reliability Test

Reliability is the degree to which a research instrument yields consistent results or data after repeated trials (Sekaran & Bougie, 2016). The survey applied a reliability check using Cronbach's Alpha scores. Cronbach's alpha coefficient ranges from 0 to 1.0. A value of 0.7 is considered the acceptable value for Cronbach's alpha, whereas substantially lower values indicate an unreliable scale (Bell, Bryman, & Harley, 2022). This interpretation (alpha score above 0.7) was applied in this study to confirm the internal consistency of the study instrument.

Table 3.1 Reliability Results

Variable	Cronbach's Alpha	N of Items	Decision
Mobile banking	.763	6	Included in main research
Online banking	.783	7	Included in main research
ATMs	.750	7	Included in main research
Security	.806	7	Included in main research
Customer satisfaction	.800	7	Included in main research

3.8 Data Analysis and Presentation

The researcher checked the completed questionnaire for errors before coding it into SPSS 26 statistical software to aid the analysis. The data collected is quantitative; thus, descriptive and inferential tests was ideal for this survey. Descriptive statistics such as mean, standard deviation, percentages, and frequencies was adopted to summarize the responses. Inferential tests such as Spearman rank correlation were used to determine the association between the variables under investigation. Further, multiple linear regression was applied to determine the relationship strength between electronic banking channels and customer satisfaction in Kenyan banks. The analyzed research data was presented using charts and tables. The following regression model was used in this survey;

$$CS = \alpha + \beta_1 MB + \beta_2 OB + \beta_3 ATM + \varepsilon \quad \text{.....Equation 3.1}$$

Where,

CS is customer satisfaction in commercial banks

MB is a mobile banking service provided by commercial banks

OB is an online banking service provided by commercial banks

ATM is automatic teller machine services provided by commercial banks

β_1 - β_3 are coefficients of the independent variables

ε is the error term

3.9 Ethical Consideration

Research work that involves human participants is required to adhere to a set of ethical guidelines that ensure the respondents are well protected (Bell, Bryman, & Harley, 2022). The respondents were asked for their informed consent before engaging in the study, and their right to participate was voluntary, with no monetary compensation being provided. Secondly, the study ensured necessary approvals from the university (SU-IERC) and NACOSTI before proceeding to the fieldwork. The research ensured that collected study data is stored correctly in secured folders, thus safeguarding responses from unauthorized access. Further, the research response was only used for stated academic goals, and the respondents' confidentiality was maintained throughout the survey.

3.10 Chapter Summary

This chapter presented the methodological flow of the study, providing details about the philosophy of the study, the research design, population, sampling design, data collection procedures, research quality tests, the data analysis procedures and the ethical considerations that were made.

CHAPTER FOUR

PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

The findings of the research are presented in this chapter. It captured the response rate, the background profile, descriptive analysis and inferential analysis. The results are further represented in line with the objectives of the study.

4.2 Background Information

The background section provided results on the research response rate and the demographic characteristics of respondents and the electronic channels.

4.2.1 Response Rate

The study distributed 384 questionnaires among public members using a mix of physical questionnaires and google forms in the data collection. The responses obtained were 308 representing 80% response rate with 20% of the participants not able to be accessed due to challenges during the data collection process. This response rate was adequate to be applied in the analysis and provide reliable inferences to be used.

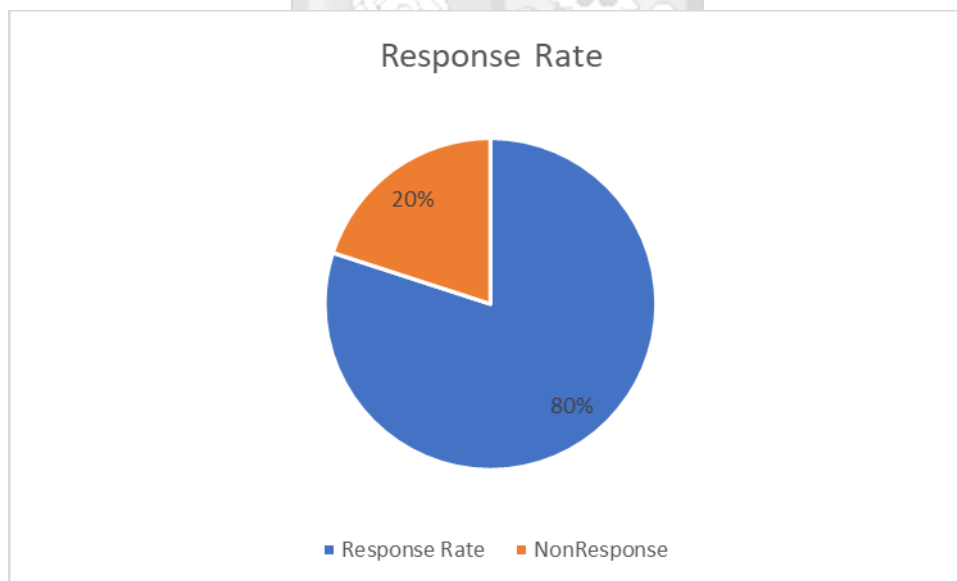


Figure 4.1 Response Rate

4.2.2 Gender of Respondents

The research evaluated the gender identity of the respondents and analysis revealed that 76% of respondents were male customer holders with only 24% were female bank customers drawn from the public.

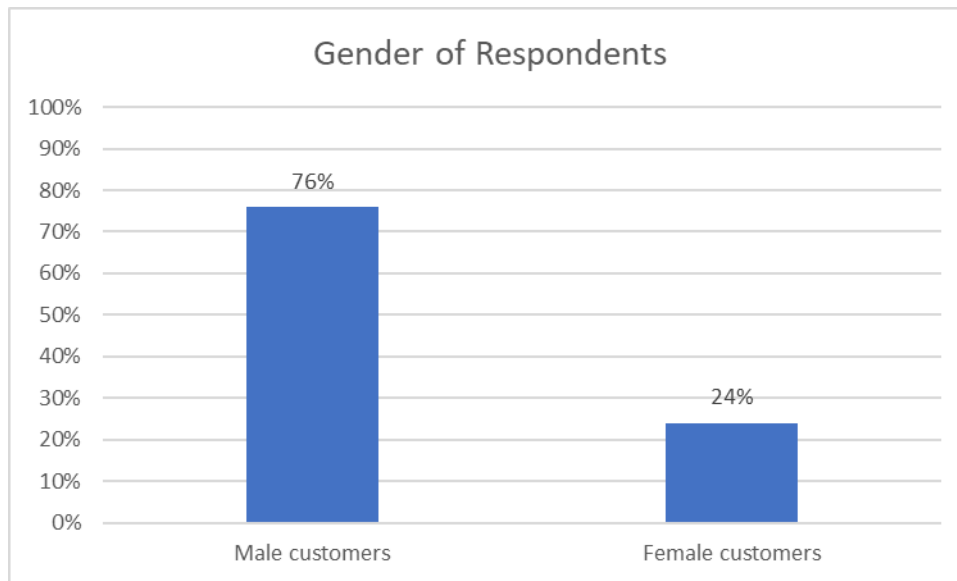


Figure 4.2 Gender of Respondents

4.2.3 Education Qualification of Respondents

The analysis focused on the education qualification of the respondents involved in the study and results is shown in Table 4.1

Table 4.1 Education Qualification

	Frequency	Percent
College Diploma	216	70.1
Undergraduate	88	28.6
Postgraduate	4	1.3
Total	308	100.0

Analysis showed that 70% of the respondents had a college diploma, 29% had an undergraduate degree with only 1% having a postgraduate degree. The results demonstrated that most members of the public with a bank account have formal education as exhibited above.

4.2.4 Age of Respondents

The analysis focused on the age of the respondents and the distribution of the results is shown in Table 4.2

Table 4.2 Age of Respondents

	Frequency	Percent
18-35 years	122	39.6
36-45 years	98	31.8
46-55 years	86	27.9
56+ years	2	.6
Total	308	100.0

Analysis exhibited that most of the respondents 40% were between 18-35 years, 32% (36-45 years) with 28% being 46-55 years of age. These findings show there is greater accessibility and usability of banking products to the youth and members of the public within other age sets in the country.

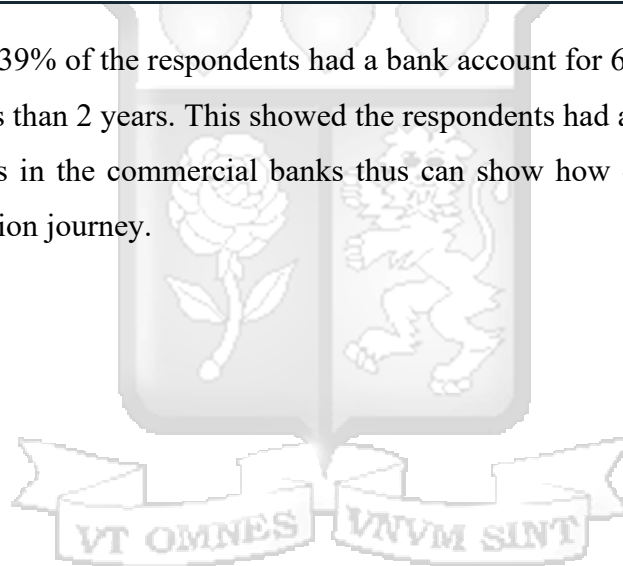
4.2.5 Years with a Bank Account

The study was interested in how long the respondents had operated a commercial account with local banks and results are shown below.

Table 4.3 Number of Years with Bank Accounts

	Frequency	Percent
Less than 2 years	49	15.9
3-5 years	101	32.8
6-10 years	120	39.0
11 + years	38	12.3
Total	308	100.0

Findings showed that 39% of the respondents had a bank account for 6-10 years, 33% for 3-5 years and 16% for less than 2 years. This showed the respondents had a breadth of experience holding back accounts in the commercial banks thus can show how electronic banking has affected their satisfaction journey.



4.3 Descriptive Analysis

The research used measures such as means and standard deviation to summarize the responses obtained in the Likert scale questions. The results are presented based on conceptualized variables of the study.

4.3.1 Mobile Banking Channels

The analysis of mobile banking channels use among respondent is presented in this section.

Table 4.5 Mobile Banking Channels

	N	Mean	Std. Deviation
Mobile banking improves my convenience in accessing services remotely	308	3.9188	.82108
The available mobile banking option are easy to use and affordable	308	3.9416	.89688
The use of mobile banking has led to a decrease in my cost-of-service delivery	308	3.8247	.92475
Mobile banking has improved accessibility to bank services by eliminating challenges in physical location	308	3.9481	.93636
Mobile banking provides alerts which enhancing tracking of transactions which improve customer financial decisions	308	4.1299	.88197
Mobile banking provides customers with instantaneous source of information on bank services	308	3.8247	.82811
Average		3.9313	0.8815

The average mean (3.9313) implied that to a high degree there was agreement within respondents they have utilized mobile banking channels provided by their various institutions they use. The respondents strongly agreed that mobile banking provides alerts which enhancing tracking of transactions which improve customer financial decisions (mean = 4.129). The analysis revealed agreement that available mobile banking option are easy to use and affordable (mean – 3.9416). The respondents agreed that mobile banking provides customers with instantaneous source of information on bank services and use of mobile banking has led to a decrease in my cost-of-service delivery (mean = 3.824).

4.3.2 Online Banking Channels

The second objective reviewed the level of online banking channels implication on customers and findings are shown below.

Table 4.6 Online Banking Channels

	N	Mean	Std. Deviation
Online banking allows customers to receive prompt resolution of queries	308	3.6331	1.06092
Online banking services provided by the bank are reliable thus enhancing customer accessibility	308	3.9156	.85763
Online banking provides a secure access to services which improve customer experience	308	4.0097	.92903
Online banking supports integration of budgeting tools which improve financial decision making	308	3.9253	.78935
Online banking provides digital wallets which can be utilized to make purchases online	308	3.6656	1.07466
Online banking provides instantaneous access to service which improve customer patronage	308	3.7500	.97818
Online banking supports customers in registering choices for reversing and changing transactions	308	3.7468	.97568
Average		3.8065	0.95221

The analysis of online banking channels had an average mean score of 3.8065 which revealed agreement among participants they had access to the channel provisioned by the commercial bank. Results further showed agreement that online banking provides a secure access to services which improve customer experience (mean = 4.009). The respondents agreed that online banking services provided by the bank are reliable thus enhancing customer accessibility (mean = 3.915). Analysis further showed agreement that online banking supports customers in registering choices for reversing and changing transactions (mean = 3.746). The customers also agreed that online banking allows customers to receive prompt resolution of queries (mean = 3.633).

4.3.3 Automated Teller Machines Channels

The survey further evaluated the perception of customers on the use of automated teller machines and findings are shown below.

Table 4.7 Automated Teller Machines Channels

	N	Mean	Std. Deviation
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ATMs allows for customer flexibility in utilization of banking services	308	3.7825	.92456
ATMs allow for quick access to banking services which enhance customer satisfaction	308	3.9253	.98735
ATMs provide an affordable access to banking service and support multiple transactions	308	3.6461	1.02481
ATM service features improve proximity to banking services for clients	308	3.7175	.96928
ATM provide a secure and trustworthy access to banking services	308	3.7792	.99672
ATMs provide continuous access to bank services 24/7	308	3.9903	.83290
ATM transactions are prone to less errors and provide records that customers can rely on	308	3.8669	.81425
Average		3.8154	0.93569

The mean average (3.8154) demonstrated consensus among respondents they have access to ATM services in their day-to-day transactions with the commercial bank. Respondents agreed that ATMs provide continuous access to bank services 24/7 (mean = 3.990) and further agreement (mean = 3.925) the ATMs allow for quick access to banking services which enhance customer satisfaction. Results showed agreement ATM provide a secure and trustworthy access to banking services (mean = 3.779). The analysis also revealed agreement that ATMs provide an affordable access to banking service and support multiple transactions (mean = 3.646).

4.3.4 Security of Electronic Channels

Further, the study focused on examining the security of electronic channels and summary of results are shown below.

Table 4.8 Security

	N	Mean	Std. Deviation
There is ease of availability of services through the electronic banking channels	308	3.6364	.92252
There is ease in maintaining and using the electronic banking channels	308	3.8474	.80679
There is improved convenience and minimal time loss when utilizing electronic banking channels	308	3.8994	.78645
There is consistency in service provision through electronic banking channels	308	3.6786	.98056
There is high protection of customer data accorded by the electronic banking channels	308	3.6006	1.03029
There is minimal risk of funds loss when using electronic banking channels	308	3.6818	1.03492
There is minimal risk of unauthorized access to my funds when using electronic banking channels	308	3.4675	1.05342
Average		3.6873	0.9449

The results showed an average mean (3.6783) which implied that respondents in general were in agreement that security of the electronic channels was a key consideration to their adoption. The respondents were in agreement (mean = 3.899) there is improved convenience and minimal time loss when utilizing electronic banking channels. Results showed agreement (mean = 3.847) there is ease in maintaining and using the electronic banking channels. Findings indicated agreement (mean = 3.600) there is high protection of customer data accorded by the electronic banking channels. A moderate agreement (mean = 3.467) revealed there is minimal risk of unauthorized access to my funds when using electronic banking channels.

4.3.5 Customer Satisfaction with Commercial Banks

The analysis further focused on the level of customer satisfaction with the commercial banks and results are shown below.

Table 4.9 Customer Satisfaction in Commercial Banks

	N	Mean	Std. Deviation
I am satisfied with the responsiveness of the services provided by the bank	308	3.6981	1.05688
I would recommend to family and friends to join my bank as new customers	308	3.8214	.92588
I routinely utilize banking services due to the ease of access and affordability	308	3.8084	.94765
I patronage the bank regularly due to the efficiency in service provision	308	3.7468	.96223
I believe my bank can satisfy my future financial needs	308	3.7922	1.07185
I am satisfied with the variety of services that are provided my bank	308	3.7143	1.08717
I am satisfied with the information provided my banks on queries and new products	308	3.7045	1.10095
Average		3.7551	1.02180

Analysis of the average mean was 3.7551 revealing that respondents had a positive view of in regard to the satisfaction of the services offered by the commercial banks. Respondents agreed that they would recommend to family and friends to join my bank as new customers (mean = 3.821). Results noted agreement the customers routinely utilize banking services due to the ease of access and affordability (mean = 3.808). The findings indicated agreement (mean = 3.704) they are satisfied with the information provided my banks on queries and new products. The study noted agreement (mean = 3.698) they are satisfied with the responsiveness of the services provided by the bank.

4.4 Correlation Analysis

Correlation tests were performed to determine the nature of the relation between the various study variables and is shown in Table 4.10

Table 4.10 Correlation Results

		Correlations					
		Customer Satisfaction	Mobile Banking	Online Banking	Automated Banking	Security	
Spearman's rho	Customer Satisfaction	Correlation	1.000				
		Coefficient					
		Sig. (2-tailed)	.				
		N	308				
	Mobile Banking	Correlation	.221**	1.000			
		Coefficient					
		Sig. (2-tailed)	.000	.			
		N	308	308			
	Online Banking	Correlation	.320**	.339**	1.000		
		Coefficient					
		Sig. (2-tailed)	.000	.000	.		
		N	308	308	308		
	Automated Banking	Correlation	.267**	.184**	.229**	1.000	
		Coefficient					
		Sig. (2-tailed)	.000	.001	.000	.	
		N	308	308	308	308	
	Security	Correlation	.266**	.147**	.091	.234**	1.000
		Coefficient					
Sig. (2-tailed)		.000	.010	.113	.000	.	
	N	308	308	308	308	308	

** . Correlation is significant at the 0.01 level (2-tailed).

The correlation analysis revealed there was weak positive and significant relation between mobile banking channels and customer satisfaction among commercial banks ($r = .221^{**}$, $\text{sig} = .000$). The study further established there was weak positive and significant effect ($r = .320^{**}$, $\text{sig} = .000$) between online banking channels and customer satisfaction among commercial banks. The analysis revealed there was a weak positive and significant relation between automated teller machine channels and customer satisfaction among commercial banks ($r = .267^{**}$, $\text{sig} = .000$).

4.5 Regression Analysis

The study performed two regression analysis; one with three predictor variables and the second model with the moderator. The findings are shown in Table 4.11

Table 4.11 Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.679 ^a	.461	.455	.47603
2	.709 ^b	.503	.496	.47036

a. Predictors: (Constant), Automated Banking, Mobile Banking, Online Banking

b. Predictors: (Constant), Automated Banking, Mobile Banking, Online Banking, Security

The summary of the regression analysis for the first model showed a coefficient of determination $R^2 = .461$ implying that holding all other factors constant electronic banking

channels accounted for atleast 46.1% of the levels of customer satisfaction among commercial banks in Kenya.

The second model showed $R^2 = .503$ which demonstrated that taking into consideration the moderating variable; security positively improved the relationship between electronic banking channels and the customer satisfaction among commercial banks in Kenya.

Table 4.12 ANOVA Summary

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.579	3	3.860	17.032	.000 ^b
	Residual	68.888	304	.227		
	Total	80.466	307			
2	Regression	13.431	4	3.358	15.176	.000 ^c
	Residual	67.036	303	.221		
	Total	80.466	307			

a. Dependent Variable: Customer Satisfaction

b. Predictors: (Constant), Automated Banking, Mobile Banking, Online Banking

c. Predictors: (Constant), Automated Banking, Mobile Banking, Online Banking, Security

The ANOVA analysis for the first model revealed a F-calculated = 17.032, sig = .000 which signified there was a positive and statistically significant relation between electronic banking channels and the customer satisfaction among commercial banks in Kenya.

Further, the results on model 2; f-calculated = 15.176, sig = .000 which showed there was a positive and significant moderating effect of security on the relationship between electronic banking channels and the customer satisfaction among commercial banks in Kenya.

Table 4.13 Regression Coefficients Summary

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.395	.338		4.131	.000
	Mobile Banking	.123	.063	.111	1.954	.052
	Online Banking	.254	.067	.219	3.820	.000
	Automated Banking	.238	.066	.197	3.585	.000
2	(Constant)	1.032	.356		2.898	.004
	Mobile Banking	.105	.063	.094	1.674	.095
	Online Banking	.252	.066	.217	3.827	.000
	Automated Banking	.190	.068	.157	2.807	.005
	Security	.170	.059	.159	2.893	.004

a. Dependent Variable: Customer Satisfaction

$$CS = 1.395 + .123MB + .254OB + .238ATM + .338 \dots \dots \dots \text{Equation 4.1}$$

The constant for the model $\alpha = 1.395$, $t = 4.131$, $\text{sig} = .000$ which demonstrated there was a positive customer satisfaction experience within the commercial banks. On the first variable mobile banking channels the findings showed $\beta_1 = .123$, $t = 1.954$, $\text{sig} = .05$ demonstrating a positive and significant effect between mobile banking channels and the customer satisfaction among commercial banks in Kenya. Changing mobile banking channels components by a unit will significantly improve customer satisfaction by at least 12.3%. The results on the second variable demonstrated $\beta_2 = .254$, $t = 3.820$, $\text{sig} = .000$ demonstrating a positive and significant effect between online banking channels and the customer satisfaction among commercial banks in Kenya. Changing online banking channels components by a unit will significantly improve customer satisfaction by at least 25.4%.

On the third objective the results revealed $\beta_3 = .238$, $t = 3.820$, $\text{sig} = .000$ demonstrating a positive and significant effect between automated teller machines channels and the customer satisfaction among commercial banks in Kenya. Changing ATMs channels components by a unit will significantly improve customer satisfaction by at least 23.8%.

Lastly on the security of the electronic channels, the findings showed $\beta_4 = .170$, $t = 2.893$, $\text{sig} = .004$ indicating a positive and significant effect between security and the customer satisfaction among commercial banks in Kenya. Changing security aspects by a unit will significantly improve customer satisfaction by at least 17%.

4.6 Chapter Summary

This chapter presented the findings that were drawn from the analysis. These are presented from the descriptive to inferential statistics comprising the correlation and regression analyses. The next chapter presents a summary of the findings, discussion and conclusions that can be drawn from the analysis.



CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1 Introduction

The chapter presents the summary of findings and discusses them based on the previous studies. The chapter then presents the conclusion and recommendations. Lastly, the chapter highlights the areas for further research that can be conducted in the future.

5.2 Summary of Key findings

This research sought to establish the effect of electronic banking on customer satisfaction of commercial banks in Kenya. Specifically, the research sought to establish the effect of mobile banking on customer satisfaction of commercial banks in Kenya; determine the influence of online banking on customer satisfaction of commercial banks in Kenya; to examine the effect of automated teller machines on customer satisfaction of commercial banks in Kenya. Further the study examined the moderating effect of security of electronic banking on customer satisfaction of commercial banks in Kenya. The research was grounded on the technology acceptance model and technology threat avoidance theory. A sample of 384 bank customers was randomly selected to participate in the study. The collected survey data was analyzed using descriptive and inferential analysis.

The research was conducted within Nairobi County and was able to achieve an 80% response rate with 76% of respondents were male bank customers with only 24% were female bank customers represented. The profile of the participants showed that 70% of the respondents had a college diploma, 29% had an undergraduate degree indicating a higher education attainment.

The correlation analysis revealed there was weak positive and significant relation between mobile banking channels and customer satisfaction among commercial banks. The study further established there was weak positive and significant effect between online banking channels and customer satisfaction among commercial banks. The analysis revealed there was a weak positive and significant relation between automated teller machine channels and customer satisfaction among commercial banks. The regression analysis revealed that there was a positive and statistically significant relation between electronic banking channels and the customer satisfaction among commercial banks in Kenya.

There was a positive and significant moderating effect of security factors on the relationship between electronic banking channels and the customer satisfaction among commercial banks in Kenya. On the first variable mobile banking channels the findings showed demonstrated a positive and significant effect between mobile banking channels and the customer satisfaction among commercial banks in Kenya. The results on the second variable demonstrated a positive and significant effect between online banking channels and the customer satisfaction among commercial banks in Kenya. On the third objective the results revealed a positive and significant effect between automated teller machine channels and the customer satisfaction among commercial banks in Kenya. Findings further showed a positive and significant effect between reliability and security and customer satisfaction among commercial banks in Kenya

5.3 Discussion of Results

The discussion of the findings is presented on the basis of the specific objectives of the study. They are discussed below.

5.3.1 Mobile Banking and Customer Satisfaction

On the first objective mobile banking channels the findings showed demonstrated a positive and significant effect between mobile banking channels and the customer satisfaction among commercial banks in Kenya. The definition and benefits of mobile banking, as described by Arilesere et al. (2021), align well with the current findings. The study highlights that mobile banking is an innovative financial product offering various services such as balance checks, transactions, payments, and credit applications at convenient and affordable costs. This supports the finding that mobile banking enhances customer satisfaction by providing convenient and cost-effective banking solutions. Theoretically, the ease and convenience of use are identified in the technology acceptance model as key drivers of technology acceptance and use both at individual and organizational levels. According to the TAM, customers prefer systems that are easy to access, use and cost effective without hidden charges, all key elements of mobile banking.

The current study's findings are in line with Odhiambo (2017), who noted that mobile banking enables customers to access basic banking services anytime and anywhere. Similarly, Power (2020) found that the convenience of accessing banking services through mobile devices significantly impacts customer satisfaction, with mobile banking users being happier with their banking experiences compared to non-users. The survey by Wewege, Lee, and Thomsett (2020) further supports this by showing high satisfaction and loyalty among mobile banking

users, indicating that mobile banking fosters strong customer relationships and reduces the likelihood of switching banks.

The findings from Yu and Nuangjamnong (2022) also align with the current study, demonstrating that mobile banking positively correlates with customer satisfaction. Factors such as transaction speed, accessibility, cost, flexibility, simplicity of use, and relative advantage significantly impact customer satisfaction. Despite the different geographic focus, the positive impact of mobile banking on customer satisfaction is consistent across both studies, reinforcing the notion that mobile banking's benefits are universal. Alsmadi et al. (2022) found a negative but significant relationship between poorly designed mobile banking apps and customer satisfaction in Morocco. The current study aligns with this finding by implicitly emphasizing the importance of usability and app quality. It suggests that banks need to invest in high-quality mobile banking apps to ensure a positive customer experience. Thus, the relationship between mobile banking app quality and customer satisfaction is corroborated.

Locally, Halima and Wepukhulu (2020) found that mobile banking reduced transaction costs and eased complications associated with fund transfers, improving service offerings and facilitating financial inclusion. These findings support the current study by highlighting the role of mobile banking in enhancing customer satisfaction through cost reduction and improved service delivery. Githae, Muriuki, and Njeru (2018) noted several beneficial impacts of mobile banking, including enhanced client relationships, new product development, accessibility, operational efficiency, and customer satisfaction in Kenyan microfinance institutions. While the context differs slightly, the focus on operational efficiency and customer satisfaction parallels the current study's findings, emphasizing mobile banking's role in enhancing customer experience and satisfaction.

5.3.2 Online Banking and Customer Satisfaction

The results on the second objective demonstrated a positive and significant effect of online banking channels and the customer satisfaction among commercial banks in Kenya. The study findings were consistent with Obbo (2022) and Nickel (2018), who noted that online banking provides a diverse range of financial transactions through interactive websites, offering services such as loan applications, account transfers, balance inquiries, and bill payments. This extensive service offering aligns with the current study's findings, which suggest that the variety and reliability of online banking services positively impact customer satisfaction by providing convenience and efficiency. The importance of efficiency and demonstrability of

results are recognized in the technology acceptance model which predicts that customers are more likely to adopt technologies that address unique challenges effectively and without additional costs. According to the TAM, banks can increase customer satisfaction by making the systems more efficient and convenient to use.

The findings were also corroborated by Akhisar, et al., (2015) who found that internet banking helps banks reduce average operational costs and overhead expenses, and by Hammoud, Rima, and Ibrahim (2018) whose analysis of customer satisfaction in Lebanon revealed that ease of use, efficiency, reliability, and security in online banking significantly improve customer satisfaction. This directly supports the current study's results, emphasizing that high-quality online banking services enhance the overall customer experience. The findings are also consistent with Kinyua's (2020) analysis which explored the influence of internet banking on customer satisfaction in Kenya and found that the ease of use, reliability, and convenience of online banking are critical drivers of customer satisfaction.

The study was however disputed by Sambaombe and Phiri (2021) who found an insignificant impact of internet banking on customer satisfaction in Zimbabwe due to customers' concerns about digital costs and negative attitudes towards internet banking. This contrasts with the current study's findings in Kenya, where online banking positively impacts satisfaction and the difference may be attributed to varying levels of digital literacy, and trust. Auta (2018) highlighted the flexible and convenient features of e-banking in Nigeria, but also pointed out security concerns due to low data protection regulations. Similarly, Arisa and Muturi (2018) noted that poor network connections and security concerns in Kenya affected satisfaction with e-banking applications. While the current study found a positive impact, these studies suggest that improving network infrastructure and enhancing security measures are crucial for maintaining customer satisfaction.

5.3.3 Automated Teller Machines and Customer Satisfaction

On the third objective the results revealed a positive and significant effect between automated teller machines channels and the customer satisfaction among commercial banks in Kenya. The findings are consistent with Bochaberi and Ong'era (2020) who confirm that ATMs provide multiple services, including cash withdrawals and deposits, at a lower transaction cost compared to branch tellers. This aligns with the current study, which shows that ATMs improve customer satisfaction by offering accessible, cost-effective banking services. The finding that

customers are satisfied with the reliability and accessibility aspects of ATMs are predicted in the TAM which predicts that customers are likely to accept and be satisfied with services that are reliable, secure and easy to access.

The study findings were also corroborated by Obbo (2022) who reported a significant positive association between the frequency of ATM usage and customer satisfaction in Uganda. Customers appreciated the user-friendliness of ATMs for routine transactions, which increased their satisfaction. This supports the current study's findings, emphasizing that frequent and easy use of ATMs leads to higher customer satisfaction. Saroy et al. (2023) found that ATMs significantly impact customer satisfaction in Mumbai, India, with factors like accessibility, proximity, and extended operating hours contributing to higher satisfaction rates. The study also emphasized the importance of security measures at ATM locations. These findings align with the current study, which indicates that ATMs enhance customer satisfaction through convenience and secure access to banking services.

Similarly, Kazeem (2021) in Nigeria found a significant positive correlation between ATM usage and customer satisfaction, noting that ATMs reduce operational expenses and save customers' time. These benefits align with the current study, reinforcing the idea that ATMs contribute to customer satisfaction by enhancing efficiency and convenience in banking transactions. Suleiman and Yasir (2022) also identified that ATM service dimensions such as reliability, responsiveness, and tangibility significantly affect customer satisfaction in Nigerian banks. Moreover, Malik (2014) linked ATMs with enhanced customer satisfaction and financial deepening among commercial banks, supporting the notion that ATMs contribute positively to customer experiences. These studies highlight the need to improve the service dimensions and security to address customer concerns.

The findings were however contrasted by Asuquo and Ezekwe (2020) who found significant negative influences of ATM technologies on customer satisfaction among Ghanaian banks. Issues like difficulty in withdrawing cash, inadequacy of cash, trapped ATM cards, and slow resolution of complaints were major factors. This contrasts with the current study's positive findings, which may indicate that Kenyan banks may have addressed these issues more effectively. Similarly, Mugambi (2022) found that many customers in Kenya are resistant to new technologies due to limited awareness, perceptions of digital service costs, and a preference for banking halls. While the current study found a positive impact of ATMs on

customer satisfaction, there is need for banks to intensify awareness campaigns and ensure digital costs are manageable to overcome resistance and improve customer perceptions

5.3.4 Moderating Effect of E-banking Security on e-banking Customer Satisfaction

Findings further showed a positive and significant effect between reliability and security and the customer satisfaction among commercial banks in Kenya. The findings of the current study align with Indriastuti et al. (2022) who emphasize the critical role of trust in e-banking services for customer satisfaction. Their study highlights that enhanced e-service quality dimensions (accessibility, efficiency, assurance, privacy, and responsiveness) and e-trust significantly determine customer satisfaction. This finding aligns with theoretical predictions from the Technology Threat Avoidance Theory which predicts that individuals are more likely to avoid a technology if they perceive it to be highly insecure, and will trust, and be satisfied with technologies that are secure with security measures such as authentication, encryption, passwords and malware protection. In essence, TTAT aligns with the current study and highlights that customer satisfaction is higher when customers are less worried about concerns over financial and information loss due to digital crimes.

Findings were also corroborated by Jibril et al. (2020) who utilized the technology threat avoidance theory to show that customers' threat awareness significantly impacts their usage or avoidance behavior. Their findings revealed that fear of online identity theft significantly affects customers' satisfaction and intention to use e-banking services in Ghana. This supports the current study's finding that addressing security and reliability concerns is crucial for maintaining customer satisfaction and encouraging the continued use of e-banking channels in Kenya. Gao, Guo, and Jiang (2023) on the other explored customer security perceptions of facial recognition payment technology, revealing that perceived information vulnerability reduces customer satisfaction and intention to use the technology. This underscores the importance of security measures in financial technologies, corroborating the current study's conclusion that reliable and secure e-banking services enhance customer satisfaction.

The findings were consistent with those of Vijayanand (2021) who found that responsiveness, convenience, and security predict satisfaction with e-banking services. This study recommended that banks ensure secure systems and encourage the use of alternative channels to boost customer trust in e-banking services. This aligns with the current study, emphasizing that reliable and secure digital banking platforms are crucial for customer satisfaction. Afroze et al. (2021) also demonstrated that the reliability of e-banking channels significantly influences customer satisfaction and loyalty and noted that customers lose confidence when

they encounter negative reports of data breaches and digital transaction failures. This finding supports the current study's conclusion that ensuring reliability and security in e-banking services is essential for maintaining customer satisfaction.

The findings were however contrasted by Aribake and Aji (2020) who revealed that an increase in phishing attacks damaged customer satisfaction, trust, and intention to use internet banking. While the current study found a positive relationship between security and customer satisfaction, Aribake and Aji's (2020) findings suggest that without addressing security threats effectively, customer satisfaction can significantly decline. This highlights the critical need for continuous improvement in security measures to sustain customer satisfaction.

5.4 Conclusions

The findings of this study demonstrate a positive and significant effect of mobile banking channels on customer satisfaction among commercial banks in Nairobi County, Kenya, supporting predictions of the TAM. The study concludes that mobile banking significantly improves the convenience of accessing banking services remotely and customers appreciate the ability to manage their financial transactions without the need to visit a physical bank branch. The findings also suggest that customers find mobile banking options easy to use and affordable enhancing customer satisfaction. Additionally, the study concludes that the use of mobile banking has led to a perceived decrease in the cost of service delivery. Based on the highest mean score, the study shows that customers greatly value the alerts provided by mobile banking, which enhance their ability to track transactions and make informed financial decisions. This feature is critical for maintaining financial control and security.

The findings from the second objective demonstrate a positive and significant effect of online banking channels on customer satisfaction among commercial banks in Nairobi County, Kenya. This finding is in line with the predictions of the TAM. The study concluded that although online banking facilitates prompt resolution of customer queries, there was some variability in customer experiences. The findings also suggest that customers find online banking services provided by their banks to be reliable contributing significantly to their satisfaction. The study also concluded that security of online banking platforms is crucial for improving the overall customer experience and trust in electronic banking services. The study also concluded that customers value the instantaneous access to banking services provided by online banking enhancing customer patronage and overall satisfaction.

The study also found a positive and significant effect of Automated Teller Machine (ATM) channels on customer satisfaction among commercial banks in Nairobi County, Kenya, supporting the presuppositions of the TAM. The study concluded that ATMs provide considerable flexibility for customers in utilizing banking services and is therefore a significant factor in enhancing customer satisfaction. The findings also suggest that ATMs enable quick access to banking services thereby reduce wait times and improve overall customer experience. The study also concludes that ATMs offer affordable access to banking services and support multiple transaction types. Furthermore, ATMs provide a secure and trustworthy access to banking services which help build customer trust in using ATMs. The high mean score also led to the conclusion that customers highly value the continuous access to banking services provided by ATMs, which operate 24/7. This round-the-clock availability is crucial for meeting the diverse needs of customers.

Lastly, the findings of this study showed a positive and significant effect of the reliability and security of electronic banking channels on customer satisfaction among commercial banks in Nairobi County, Kenya. This finding supports the hypothesis of the TTAT. The study concludes that customers find it easy to access services through electronic banking channels. The findings also suggest that customers find electronic banking channels easy to maintain and use. This ease of availability and use is a critical factor in enhancing customer satisfaction, ensuring that banking services are readily accessible whenever needed. The study also posits that customers perceive a high level of consistency in service provision through electronic banking channels and consistent and reliable services are fundamental to maintaining customer trust and satisfaction. The findings also concludes that customers perceive a minimal risk of funds loss when using electronic banking channels. Furthermore, customers feel there is minimal risk of unauthorized access to their funds when using electronic banking channels.

5.5 Recommendations

The recommendations of the study are provided in terms of policy, managerial and theoretical contribution.

5.5.1 Policy Recommendation

From the findings, it is clear that there is an improvement satisfaction with e-banking channels among customers and this should be a clear signal to policy makers at the Central Bank of Kenya to ensure they keep up with advances in technology to ensure they evolve with emerging systems to ensure better security, transparency, and efficiency. Clear policies are a guide that

can improve banks' management of customer data. The study calls for the development and enforcement of clear customer data management and privacy laws to ensure customers that the e-banking ecosystem is secure, transparent, and efficient.

The study also calls for the relaxation of import policies or the introduction of incentives to improve banks' adoption of new technologies and services such as digital cash and wallets which is a fast-growing financial segment. To complement these efforts, the study calls for the implementation of policies that can make it easier for customers to access information on the use and benefits of these new forms of payment and investing. By implementing robust policies, bank managements can be better placed to compete with other financial service providers whose focus is on providing digital financial services. They can also ensure the services they offer are secure, reliable and meet the evolving expectations and needs of customers and the operating environment.

5.5.2 Managerial Recommendation

The study recommends that commercial banks focus on improving the usability and affordability of mobile banking apps to ensure they are user-friendly and cost-effective. Regular updates and customer feedback mechanisms can also help in identifying areas for improvement. The study also recommends that banks should enhance the accessibility of mobile banking services by expanding their network and ensuring seamless connectivity even in remote areas. The study also suggests strengthening of security features in mobile banking applications to protect customer data and transactions, thereby increasing trust and satisfaction.

It's further recommended that banks provide robust online customer support to address queries promptly by implementing chatbots and 24/7 support services, which can significantly improve customer satisfaction. Banks should also maintain the high standards of reliability and security in online banking platforms to protect customer information and transactions. Regular security audits and updates can also help mitigate risks. The study also recommends integration of additional tools such as budgeting and financial planning tools to help customers manage their finances more effectively, thus enhancing their overall banking experience.

The research recommendations are for banks managements to increase the number of ATMs in strategic locations to ensure that customers have easy and convenient access to banking services at all times. They should also ensure that ATMs are well-maintained and operational

24/7. The study further recommends that banks should continuously update ATM functionalities to support a wider range of transactions and services, including cash deposits, bill payments, and fund transfers. Banks should also implement advanced security measures at ATMs, such as surveillance cameras and secure PIN verification processes, to enhance customer trust and satisfaction.

Lastly, the study recommends that regular maintenance and system upgrades can help in maintaining service quality. The study also suggest investment in advanced cybersecurity measures to protect customer data. This may include encryption, multi-factor authentication, and regular security audits to prevent unauthorized access and data breaches. The study also recommends development and implementation of comprehensive risk management strategies to minimize the risk of funds loss and unauthorized access as well as educating customers on safe banking practices can also help in reducing security risks.

5.5.3 Theoretical Contribution

The study findings confirm the assertions of the TAM that features of a new technology such as its usability and accessibility have significant effects on customers' satisfaction with the product. The study therefore contributes to the TAM by showing how these features influence customers' satisfaction with mobile banking channels, online banking channels and automated teller machines channels. Previous studies were restricted to analysis of e-banking channels and customer satisfaction; this study is unique as it incorporates security as a moderator variable on the relationship between e-banking channels and customer satisfaction and in doing so, contributes to the TTAT by advancing our understanding of how security factors influence customers' perceptions about a new technology and their satisfaction with its use. The study shows the impact of security features on customers' satisfaction and sustained use of e-banking channels and justifies banks continued investment in innovative ways to improve security. The study also links these two theories and they can be used in the future to investigate other factors that can influence user perceptions and satisfaction with new technologies.

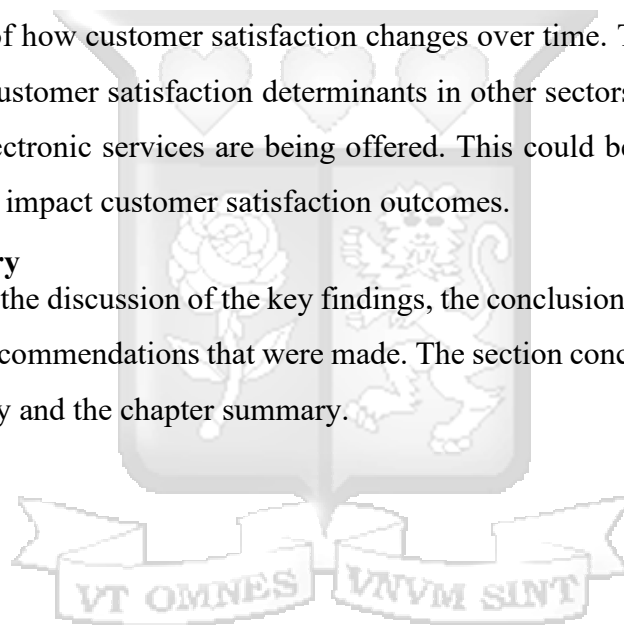
5.6 Limitations of the study and Suggestions for Further Studies

Customer satisfaction is a broad concept that varies significantly across multiple sectors and contexts. This study sought to establish the effect of electronic banking on customer satisfaction of commercial banks in Kenya. This study limited itself to an analysis of customer satisfaction among banks offering e-banking services and products. It also was limited to an

analysis of banks located in Nairobi County, Kenya and used security as the moderating variable. Further research could be conducted on other financial institutions in the country including microfinance institutions and Saccos. The results can be used for comparison and for the betterment of financial institutions in Kenya. More research could also be conducted with a focus across different customer segments e.g., millennials, elderly, business customers and vulnerable groups e.g., low-income households, technologically unskilled users to understand varying needs and expectations and propose targeted solutions. methodologically, the study's use of a descriptive research design also presents a limitation since this study design cannot establish cause-and-effect relationships, or carry out an assessment of changes over time. Moreover, the approach assumes that the selected population is an accurate representation of the total population which may not be the case. Future studies can use other methods to get a better understanding of how customer satisfaction changes over time. The study also calls for further analysis into customer satisfaction determinants in other sectors such as the education sector where other electronic services are being offered. This could be key to understanding how education factors impact customer satisfaction outcomes.

5.7 Chapter Summary

This chapter provided the discussion of the key findings, the conclusions that were drawn from the findings and the recommendations that were made. The section concluded by providing the limitations of the study and the chapter summary.



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APPENDICES

Appendix I: Introduction Letter

To the Respondent

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Ref: **Request to Collect Data for Academic Research**

Hello, I'm Joyce Wanjiru a student at Strathmore University pursuing a MBA degree. I'm required to undertake a research study on my area of interest. My research is focused on the *influence of electronic banking on customer satisfaction among commercial banks in Nairobi County, Kenya.*

I'm requesting for your assistance in filling the attached questionnaire. All the provided information will be treated with utmost confidentiality and will not be shared with any third-parties.

Kindly provide honest responses on all the questions. I highly appreciate your assistance towards the research.

With regards,

Joyce

Appendix II: Research Questionnaire
Part A: Demographic Information

Please indicate in with a tick (√) where appropriate

1. Gender

Male ()

Female ()

2. Your highest education qualification

College diploma ()

Undergraduate degree ()

Postgraduate degree ()

3. Your age category

18 - 35 years ()

36 – 45 years ()

46 – 55 years ()

Over 56 years ()

4. Number of years you have held a bank account within commercial banks

Less than 2 years ()

3 – 5 years ()

6 – 10 years ()

Over 11years ()

Please indicate in the table with a tick (√) or across (×) with a scale of
5= strongly agree 4= Agree 3= Disagree 2= Strongly Disagree 1= Not at all

	Statement on Mobile Banking	1	2	3	4	5
1.	Mobile banking improves my convenience in accessing services remotely					
2.	The available mobile banking option are easy to use and affordable					
3.	The use of mobile banking has led to a decrease in my cost-of-service delivery					

4.	Mobile banking has improved accessibility to bank services by eliminating challenges in physical location					
5.	Mobile banking provides alerts which enhancing tracking of transactions which improve customer financial decisions					
6.	Mobile banking provides customers with instantaneous source of information on bank services					

Please indicate in the table with a tick (√) or across (×) with a scale of
5= strongly agree 4= Agree 3= Disagree 2= Strongly Disagree 1= Not at all

	Statement on Online Banking	1	2	3	4	5
1.	Online banking allows customers to receive prompt resolution of queries					
2.	Online banking services provided by the bank are reliable thus enhancing customer accessibility					
3.	Online banking provides a secure access to services which improve customer experience					
4.	Online banking supports integration of budgeting tools which improve financial decision making					
5.	Online banking provides digital wallets which can be utilized to make purchases online					
6.	Online banking provides instantaneous access to service which improve customer patronage					
7.	Online banking supports customers in registering choices for reversing and changing transactions					

Please indicate in the table with a tick (√) or across (×) with a scale of
5= strongly agree 4= Agree 3= Disagree 2= Strongly Disagree 1= Not at all

	Statement on Automated Teller Machines	1	2	3	4	5
1.	ATMs allows for customer flexibility in utilization of banking services					
2.	ATMs allow for quick access to banking services which enhance customer satisfaction					

3.	ATMs provide an affordable access to banking service and support multiple transactions					
4.	ATM service features improve proximity to banking services for clients					
5.	ATM provide a secure and trustworthy access to banking services					
6.	ATMs provide continuous access to bank services 24/7					
7.	ATM transactions are prone to less errors and provide records that customers can rely on					

	Security	1	2	3	4	5
•	There is ease in maintaining and using the electronic banking channels					
•	There is improved convenience and minimal time loss when utilizing electronic banking channels					
•	There is high protection of customer data accorded by the electronic banking channels					
•	There is minimal risk of funds loss when using electronic banking channels					
•	There is minimal risk of unauthorized access to my funds when using electronic banking channels					

Part C: Customer Satisfaction in Kenya

Please indicate in the table with a tick (√) or across (×) with a scale of
5= strongly agree 4= Agree 3= Disagree 2= Strongly Disagree 1= Not at all

	Statement on Customer Satisfaction	1	2	3	4	5
1.	I am satisfied with the responsiveness of the services provided by the bank					
2.	I would recommend to family and friends to join my bank as new customers					
3.	I routinely utilize banking services due to the ease of access and affordability					

4.	I patronage the bank regularly due to the efficiency in service provision					
5.	I believe my bank can satisfy my future financial needs					
6.	I am satisfied with the variety of services that are provided my bank					
7.	I am satisfied with the information provided my banks on queries and new products					

Thank you for the time.



Appendix III: Ethical Review Permit



11th April 2024

Ms Maina Joyce,
Joyce.maina@strathmore.edu

Dear Ms Maina,

RE: Influence of Electronic Banking on Customer Satisfaction among Commercial Banks in Kenya

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU-masters** research proposal. Your application reference number is **SU-ISERC2089/24**. The approval period is from **11th April 2024 to 10th April 2025**.

This approval is subject to compliance with the following requirements:

- i. Only approved documents including (informed consents, study instruments, MTA) will be used.
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-ISERC.
- iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-ISERC within 72 hours of notification.
- iv. Any changes anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-ISERC within 72 hours.
- v. Clearance for the export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to the expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days of completion of the study to SU-ISERC.

Before commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) <https://research-portal.nacosti.go.ke/> and obtain other clearances needed.

Yours sincerely,

A blue ink signature of Mr Ambrose Rachier.

Mr Ambrose Rachier,
Chairperson; SU-ISERC



Appendix IV: NACOSTI Research License

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 287063	Date of Issue: 22/May/2024
RESEARCH LICENSE	
	
This is to Certify that Miss.. Maina Joyce of Strathmore University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: INFLUENCE OF ELECTRONIC BANKING ON CUSTOMER SATISFACTION AMONG COMMERCIAL BANKS IN KENYA for the period ending : 22/May/2025.	
License No: NACOSTI/P/24/34910	
287063 Applicant Identification Number	 Director General NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
	Verification QR Code 
NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.	
See overleaf for conditions	

Appendix V: Krejcie and Morgan Sample Determination Table

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	100000	384



Appendix VI: List of Commercial Banks

- ABSA Bank Kenya PLC
- Access Bank (Kenya) PLC
- African Banking Corporation Limited
- Bank of Africa Kenya Limited
- Bank of Baroda (Kenya) Limited
- Bank of India
- Citibank N.A Kenya
- Commercial International Bank (CIB) Kenya Limited
- Consolidated Bank of Kenya Limited
- Co-operative Bank of Kenya Limited
- Credit Bank PLC
- Development Bank of Kenya Limited
- Diamond Trust Bank Kenya Limited
- DIB Bank Kenya Limited
- Ecobank Kenya Limited
- Equity Bank Kenya Limited
- Family Bank Limited
- Guaranty Trust Bank (K) Ltd
- Guardian Bank Limited
- Gulf African Bank Limited
- Habib Bank A.G Zurich
- HF Limited
- I&M Bank Limited
- KCB Bank Kenya Limited
- Kingdom Bank Limited
- Middle East Bank (K) Limited
- M-Oriental Bank Limited
- National Bank of Kenya Limited
- NCBA Bank Kenya PLC
- Paramount Bank Limited
- Premier Bank Kenya Limited
- Prime Bank Limited

- SBM Bank Kenya Limited
- Sidian Bank Limited
- Spire Bank Ltd
- Stanbic Bank Kenya Limited
- Standard Chartered Bank Kenya Limited
- UBA Kenya Bank Limited
- Victoria Commercial Bank PLC

