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THE EFFECT OF SYSTEM DISRUPTIONS ON CUSTOMER SATISFACTION THE CASE OF BANK OF ABYSSINIA S.C

PREPARED BY MARIHUN TILAHUN BEKELE

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THE EFFECT OF SYSTEM DISRUPTIONS ON CUSTOMER SATISFACTION THE CASE OF BANK OF ABYSSINIA S.C

BY MRIHUN TILAUN BEKELE

ADIVISOR: MULATU MEBRATE (PHD)

A THESIS SUMMATED TO SCHOOL OF COMMERCE MARKETING MANAGEMENT PROGRAM UNIT MA IN MARKETING MANAGEMENT COORDINATION OFFICE

CERTIFICATE

This is to certify that the thesis entitle “The effect of system disruptions on customer satisfaction the case of Bank of Abyssinia” submitted to Addis Ababa University in order to be awarded a Masters of Marketing Management has satisfied acceptable standards for originality and university restrictions.

Main Advisor Name	**Date**	**Signature**
Mulatu Mebrate(PHD)	**Nov 12, 2024**	

Internal Examiner Name	**Date**	**Signature**
Mesfine Workneh (PHD)		

External Examiner Name	**Date**	**Signature**
Yibeltal N. (Assistant Professor)	**Oct 15, 2024**	

DECLARATION

I, the undersigned, hereby declare that the study I have prepared, entitled "the effect of system disruptions on customer satisfaction the case of Bank of Abyssinia" is original and has not been submitted to any university. I have also duly acknowledged all of the sources of materials used in this research.

Declared By:

Name: Marihun Tilahun Bekele

Signature: _____

Date:

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Abstract

This study systematically investigated the impact of disruptions on customer satisfaction at the Bank of Abyssinia (BOA). Utilizing a mixed methods approach, the research combines quantitative data from a survey of 399 BOA customers with qualitative insights from interviews with branch managers and the IT director. The findings reveal that technical glitches, utility failures, natural disasters/adverse weather conditions, and regulatory compliance issues significantly negatively impact customer satisfaction. Collectively, these variables explain 28.3% of the variance in customer satisfaction at BOA. The study concludes that disruptions significantly affect customer satisfaction in the bank. It recommended that the Bank invest in advanced technology, improve communication during service interruptions, and foster a proactive problem-solving culture to enhance service reliability and customer satisfaction.

KEY WORDS: *system disruption, technical glitches, natural disasters/adverse weather conditions, and regulatory compliance issues*

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CHAPTER ONE

Introduction

1.1 Background of the Study

The global financial system is a complex and interconnected network that plays a vital role in facilitating economic growth and development (IMF, 2010). At the core of this systems are the banking institutions, which provide a wide range of essential services to individuals, businesses, and governments. Over the past few decades, the banking industry has undergone a profound transformation, driven by rapid technological advancements, changing customer expectations, and evolving regulatory frameworks (Onunka's et al 2023) .The advent of digital technologies, such as online banking, mobile applications, and sophisticated data analytics, has revolutionized the way banks operate and interact with their customers (Tashtamirov,2023).

As the banking industry has become increasingly reliant on complex information technology (IT) systems, the risk of disruptions has also increased (Megha D et al 2022). System disruptions refer to any event or issue that interrupts the normal functioning of a bank's systems, services, and processes (Ahmad et al, 2010). These disruptions can take various forms, including technological failures, physical infrastructure problems and regulatory changes.

Technological failures, such as data breaches, cyber-attacks, software glitches, and system crashes, can lead to service outages and disrupt customer experiences (Lawrence, 2023). Physical infrastructure issues, including natural disasters, power outages, and equipment failures, can also impede access to banking services (Obolensky et al 2019). Additionally, Regulatory changes can compel banks to modify their operations and systems significantly, leading to potential temporary service disruptions (Matthew et al 1996). Such changes may arise from new compliance requirements, updated financial regulations, or shifts in industry standards (Aditya Narain et al 2012). As banks implement these adjustments, they may encounter challenges related to system integration, staff training, and customer communication (Petteri, 2024).

According to (Marley et al., 2014) service disruptions and related issues are considered the most pressing concerns facing banks competing in today's global marketplace. The average cost of disruptive events has grown more than 1000% since the 1960s (Hasani and Khosrojerdi 2016). Due to this increased complexity and the interrelationship of modern Banks, the impact of uncertainty has become difficult to predict (Khan & Yu, 2019).

According to organizational science theory, accidents and disruptions become inevitable or even "normal" in complex and tightly coupled technological systems, such as the modern banking industry (Leveson et al 2009 and Snyder et al., 2016). The increased complexity and interconnectedness of the global financial system have made the impact of these disruptions difficult to predict and mitigate (Khan & Yu, 2019).

The consequences of these disruptions can be far-reaching, not only for the banks themselves but also for their customers. For the banks, system disruptions can result in financial losses, regulatory penalties, and long-term reputational damage (Melnyk et al., 2005; Nasir et al., 2018). From the customer's perspective, these disruptions can lead to frustration, inconvenience, and a loss of trust in the bank's ability to provide reliable and uninterrupted services (Kehera et al., 2017)

The Business Continuity Institute (2020) reported the five top-ranked disruptions in 11 regions across the world. The top disruption in six regions, including Europe, the United Kingdom, Canada and Australia, was information technology (IT) outages. Four regions, including the Middle East, North Africa and Asia, listed adverse weather as the biggest disruption. Only sub-Saharan Africa listed infrastructural disruptions as their top-ranked disruption, highlighting the region's vulnerability to physical infrastructure problems (Kipkorir et al, 2021). Similarly, Ethiopian banks have grappled with disruptions, including frequent power outages and internet connectivity issues, which have negatively impacted customer satisfaction and loyalty (Mesfin, 2020).

This diverse feature of disruptions in the banking industry underscores the significant impact they can have on customer satisfaction. Therefore, the study aimed to investigate the multifaceted effects of disruptions on customer satisfaction levels, and providing valuable insights for the industry to enhance its resilience and customer-centric approach.

1.2 Statement of the Problem

In the highly competitive and rapidly evolving banking industry, customer satisfaction has become a critical metric for evaluating an institution's performance and long-term viability (Karim et al 2014). Maintaining high levels of customer satisfaction is essential for banks to retain their customer base, foster brand loyalty, and drive profitability (Chiguvi 2017, Liladhar et al 2023). One key factor that can significantly impact customer satisfaction is the occurrence of various disruptions within the bank's operations (Shannon W. et al 2007).

The impact on customer satisfaction extends beyond the immediate inconvenience experienced by individuals (Juma. et al 2020). These disruptions can also have broader implications for the bank's reputation and long-term customer relationships (Xavier, 2019). For example TSB Bank, JP Morgan chase and others well known banks were experienced major disruptions that left thousands of customers unable to access their accounts for several weeks (Milliken et al, 2018***).*** The impact on customer satisfaction was notable, as many customers expressed dissatisfaction with Bank's handling of the IT system failure and its aftermath. Customers reported loss of trust in the bank's ability to provide reliable and secure banking services, and some customers switched to other banks or reduced their engagement with Banks (Shaila Temka, 2023).

Similarly, Banks often lack adequate response strategies for operational disruptions, which can lead to prolonged service outages and increased customer frustration (Cengiz et al 2007). Insufficient communication during these events further exacerbates dissatisfaction, as customers may remain uninformed about service recovery efforts and the status of their accounts (Quy and Lan 2015).

Additionally, many banks do not implement robust contingency plans, rendering them ill-prepared for unexpected events like technical failures or natural disasters (Khiaonarong et al, 2016). Technological limitations contribute to the frequency and severity of disruptions, hindering the institution's ability to provide seamless services (Bayo, 2019). Navigating complex regulatory challenges can complicate responses to disruptions, resulting in compliance issues that negatively impact customer trust (Khan et al 2023) . Furthermore, there is often disconnect between customer expectations for service reliability and the actual

performance of banking institutions, leading to dissatisfaction when disruptions occur. Persistent disruptions can also cause long-term reputational damage, affecting a bank's market position and customer acquisition efforts (Mahdi et al, 2024)

Moreover service interruption effects can vary significantly among countries. While the underlying drivers of customer dissatisfaction may be similar, the magnitude and specific dynamics of these effects can differ due to the varying levels of technological infrastructure, regulatory environments, and customer expectations (Reza et al, 2022)

Like other countries most of Banks in Ethiopia are facing the issues of interruptions which result in delayed service delivery time: as a result customers sometimes are forced to stay long time in the premises of the Bank (Kalkidan Abebayehu, 2022). In addition authors like Garedachew Worku (2009) and Girma Abebe (2016) tried to note that due to disruptions there is prolonged service unavailability, preventing customers from accessing their accounts and conducting essential transaction.

Number of researchers highlighted the significant consequences of disruptions on customer satisfaction and loyalty in the banking sector internationally, such as Sidney Kawimbe et al, 2020 , Irene Njeri Esther et al 2019**,** Syed Mithun Ali, 2022, ShailaTemkar 2023, Dr.Shamsher, 2011 and Dr G.P Dang et al, 2018. Their findings indicated that disruptions are negatively influenced customer perceptions of convenience and accessibility, leading to decreased overall satisfaction. However studies have primarily focused on the effects of specific types of system disruptions, such as technology failures, data breaches, and infrastructural failures. There is a need for a more holistic and integrated analysis that examines the relative impact of diverse disruption types on customer satisfaction.

In Ethiopia, several studies have examined the effect of disruptions, such as IT failures, power outages, and data breaches, on customer satisfaction within the banking sector. For example, Endalkachew (2013) explored the impact of core banking systems on customer satisfaction at various banks, including Bank of Abyssinia. The study found that system outages significantly hinder service delivery, leading to increased customer frustration and decreased satisfaction levels. Rahel (2017) focused on service quality in Ethiopian banks and highlighted how network failures and power outages adversely affect customer experiences. This research emphasized that customers expect reliable service, and any disruptions can erode their trust in the institution.

Similarly, Samuel W/Yohannies (2014) investigated the influence of information technology on banking efficiency in Ethiopia. The findings indicated that technical issues, including IT failures, have a direct negative impact on customer satisfaction, as they disrupt the smooth functioning of banking services.

Tesfaye Woldu and Demelash Belay (2020) further examined the role of information technology in enhancing banking services in Ethiopia. Their study noted that frequent power outages and connectivity problems significantly impair service delivery, leading to dissatisfaction among customers.

In additionally, Palm (2023) investigated the challenges and opportunities associated with implementing ICT in the banking sector, with a particular focus on Bank of Abyssinia. This study highlighted how technical issues, such as system outages and connectivity problems, adversely affected service delivery and customer experiences. Beftu (2021) analyzed the effects of ICT on the operational efficiency of Bank of Abyssinia, demonstrating the importance of a robust ICT infrastructure in improving transaction speed and accuracy, which ultimately contributes to higher customer satisfaction. Collectively, these studies underscore the critical role of ICT in enhancing service delivery and customer engagement while also addressing the challenges faced by the banks in effectively implementing these technologies.

Despite these contributions, there exists a practical gap specifically at Banks. While previous studies provide a broad understanding of the impacts of information technology on customer satisfaction, they often lack a detailed examination of how specific interruptions—such as IT failures, power outages, natural disasters and adverse weather events and regulatory compliance challenges—affect customer experiences at Bank of Abyssinia S.C.

Therefore, this study aimed to fill the gap by examining on the specific effects of system failures—such as IT failure, power outages, regulatory changes and natural disaster —on customer experiences at Bank of Abyssinia. By examining the relationship between these disruptions and customer satisfaction, the study sought to provide actionable insights for enhancing operational resilience and improving customer service.

This study addressed a significant research gap by examining the specific effects of system failures—such as IT failures, power outages, regulatory changes, and natural disasters—on

customer experiences at the Bank of Abyssinia. While existing literature has explored customer satisfaction in the banking sector, there is a notable lack of focused studies that investigate how these particular disruptions directly impact customer satisfaction within the Ethiopian banking context. By examining the relationship between these disruptions and customer satisfaction, the study sought to provide actionable insights for enhancing operational resilience and improving customer service.

1.3 Objectives of the Study

1.3.1 General objective

The general objective was the effect of system disruptions on customer satisfaction in case of bank of Abyssinia

1.3.2 Specific objective

The specific objectives of the proposed study on the impact of system failures on customer satisfaction at Bank of Abyssinia are

- To investigate the effect of technology outages on customer satisfaction at Bank of Abyssinia.
- To examine the impact of utility disruptions on customer satisfaction in Bank of Abyssinia.
- To analyze how regulatory compliance issues affect customer satisfaction at Bank of Abyssinia.
- To investigate the effect of natural disasters and adverse weather events on customer satisfaction at Bank of Abyssinia.

1.4 Research questions

- What is the impact of technical glitch on customer satisfaction with the bank's services in bank of Abyssinia?
- How do utility disruptions affect customer satisfaction in bank of Abyssinia?
- What is the influence of regulatory compliance issues on customers' satisfaction in bank of Abyssinia?

- What is the impact of natural disasters and adverse weather events on customer satisfaction in bank of Abyssinia?

1.5 Research Hypothesis

Based on the research questions provided, the corresponding hypotheses for the study would be

H1: Technology outages have a significant negative impact on customer satisfaction at Bank of Abyssinia.

H2: Utility disruptions have a significant negative influence on customer satisfaction at Bank of Abyssinia.

H3: Regulatory issues have a significant negative impact on customer satisfaction at Bank of Abyssinia.

H4: Natural disasters and adverse weather events have a significant negative influence on customer satisfaction at Bank of Abyssinia.

1.6 Scope of the Study

The research scope was limited to investigating the effect of system disruptions on customer satisfaction within the context of Bank of Abyssinia. Geographically, the study has included selected Addis Ababa city branches and the data was collected only from selected branches. Methodologically, a mixed-methods approach was employed, combining both descriptive and explanatory analyses, which provided a comprehensive framework for conducting the study.

Conceptually, the study examines a range of system disruptions, including IT failures, power outages, regulatory compliance issues and natural disasters, and explored how these disruptions affect overall customer experience.

1.7 Significance of the Study

The study has the following significances:

- **Raising Awareness:** The findings are anticipated to raise awareness about how system disruptions impact customer satisfaction, providing valuable insights for banking institutions.

- **Providing Solutions**: The research delivers actionable solutions for the banking industry, addressing the challenges posed by disruptions. It equips institutions with insights to assess their current strategies for mitigating these issues, helping them to sustain a positive customer experience both now and in the future.
- **Serving as a Resource**: Additionally, this study could serve as a valuable reference for other researchers exploring related topics. It lays the groundwork for further investigations into the effect of system disruptions in banking, promoting continued dialogue and exploration in this critical area.

1.8 Definition of Terms

These definitions provide a conceptual understanding of the key terms and their operationalization. There is **conceptual definition** which gives theoretical understanding of concepts while an **operational definition** specifies how that concept could be observed in particular study.

1.8.1 Conceptual Definition

System disruption refers to any event or occurrence that disturbs or interrupts the normal functioning of the technological infrastructure and processes within an organization or bank ***(***Shaila Temkar**,** 2023***)***. It encompasses any incident that negatively impacts the availability, reliability, or performance of the bank's systems, potentially leading to service disruptions and compromised customer satisfaction (Vitesh Sharma**,** 2023***)***.

Customer satisfaction refers to meeting the customer's expectation on the products and services (Oliver, 1980). If the perceived performance matches or even exceeds the customers' expectations of services, they are satisfied. If it does not, the customers are dissatisfied (Fullerton and Taylor, 2015; Oliver, 1993; Rust and Zahorik, 1993; Sharifi and Esfidani, 2014, Amin, 2016).

1.8.2 Operational Definition

An operational definition explains how a concept or variable could be observed in a specific research study. System disruptions refers to any unplanned event or failure that impedes the normal operations of Bank of Abyssinia, particularly affecting service delivery at its branches.

Customer satisfaction at the Bank of Abyssinia is defined as the positive outcome experienced by clients whose expectations have been met or exceeded during their interactions with the bank.

1.9 Organization of the Paper

The study was structured into five chapters. The first chapter covered the introductory aspects of the research, including the background of the study, statement of the problem, research objectives, research questions, hypotheses, significance, scope of the study, and definitions of key terms. The second chapter focused on the literature review, containing a theoretical review and a review of previous studies relevant to the scope of this research. The third chapter was dedicated to the research methodology and design, detailing how the data sources were identified, selected, analyzed, and presented using various techniques. The fourth chapter presented, discussed, and analyzed the facts and figures obtained from both primary and secondary data sources. Finally, the fifth chapter proposed conclusions and possible recommendations based on the results presented in the preceding chapter.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter deals with a review of the related literature. Under this section: historical background banking service in Ethiopian and Bank of Abyssinia , concept of customer satisfaction, The concept of system disruptions, recovery steps from disruptions, the relationship between disruption and customer satisfaction, empirical studies that conducted effects of disruptions on customer satisfaction and conceptual framework.

2.1 Brief Historical Review of Banking Service in Ethiopia and Bank of Abyssinia

Modern Banking was to begin with followed to Florence city of Italy in 1397, but it had spread over all of Europe by the year 1700(Bhatt, 2020). In Ethiopia, Advanced banking in Ethiopia started in 1905 when the Bank of Abyssinia (BoA) was constituted in Ethiopia on Walk 10, 1905 by the British-owned National Bank of Egypt (Mauri, 1997; Pankhurst, 1963; Shaefer, 1992). BoA was entirely possessed and overseen by the National Bank of Egypt, which itself was possessed by the British Bank. BoA was formally presented and started operation on February 15, 1906, with an authorized share capital of 500,000 Pounds Sterling (Ifeanyi, 2015; Mauri, 2010; Pankhurst, 1963).

Moreover, two other outside banks named societenacionaled'Ethiope Pour le Improvement l'Agriculture et du Commerce, and Banque de l' Indochine and the Compagnie de l' AfriqueOreintale) were built up in 1908 and1915, separately. Since all of these banks were entirely outside claimed, they were criticized and as a result the Bank of Abyssinia was obtained by the Ethiopian government in 1931, which was re-named as the Bank of Ethiopia- the to begin with broadly claimed bank on the African landmass (NBE, 1999, Alemayehu, and Mahlet Girma, 2014).

During the five a long time of the Italians occupation, Banking exercises in Ethiopia were extended, but as it was the banks of Italy were working in the country's bank advertise. The intruder nation sold BoE in 1938 and supplanted its operations with the auxiliaries of six Italian

parent banks, specifically Banca d'Italia, Banco di Napoli, Banco di Roma, Banca Nacionale Del Lavoro, Societe Nacionaledi Ethiopia, and Casade Creito(Geda,2006).

After the Italian occupation of 1933-1941, banks of British got to be dynamic members in the Ethiopian managing an account segment due to political reasons and consequently Barclay's bank had been built up and was in operation in the nation from 1941-43 (Alemayehu, 1999, Misrak Tesfaye and Ratinder Kaur, 2023).

In 1963, Monetary and Banking Proclamation No. 206 was presented in the financial sector of the country. The essential thought of this decree is that a permit to carry on managing an account trade (Banking Business) in Ethiopia was allowed as it were to associations with Ethiopian nationality(s) with at slightest the Ethiopian nationals have possessed 51% of the capital. Appropriately, remote banks, which had as of now begun their operations in the nation re-applied for permit (NBE, 1999 and Mahlet Girma, 2014).

Following the development of military government in 1974, in any case, all foreign banks working in the nation in the frame of organization were nationalized and re-organized and in this manner the taking after budgetary educate were made one national bank (re-institutionalized in 1976),two specialized banks (the Agrarian and Mechanical Bank and Lodging and Sparing Bank), which as of now re-named as the Improvement Bank of Ethiopia (DBE) and the Development and Trade Bank (CBB), presently CBB is combined to commercial bank of Ethiopia , individually, Ethiopian Protections Organization and the Annuity and Social security Specialist (Berhenu and Befakedu (1999/2000).

Since financial change of 1992 beneath the unused government, these money related educate have been re-organized so as to work based on market-oriented arrangement system. Besides, unused Ethiopian private-owned financial institutions are permitted to take part in the country's money related segment (Addison &Geda, 2001).Following the drop of the Dereg administration in 1991 Monetary and Banking proclamation of 1994 of 1994 set up the national bank of Ethiopia as a legal substance, isolated from the government and sketched out its primary work. Monetary and Banking proclamation No.83/1994 and the Permitting and Supervision of Banking Business No.84/1994 laid down the lawful premise for venture in the managing an account division (MisrakTesfaye&Ratinder Kaur 2023). The later yearly report (2021/22) and other official sources of NBE uncovered that, add up to number of banks working in Ethiopia

come to 25 by the conclusion of June 2022. Five private banks have as of now gotten their permit, and 11 more are in the pipeline to connect the industry, which will bring add up to number of operational banks to 41.

The present-day Bank of Abyssinia was set up on February 15, 1996 (90 a long time to the day after the to begin with but dead private bank was set up in 1906 amid Head Menelik II) in agreement with 1960 Ethiopian commercial code and the Authorizing and Supervision of Monetary and Banking proclamation No. 84/1994. BOA begun its operation with an authorized and paid up capital of birr 50 million, and Birr 17.8 million respectively, and with only 131 shareholders and 32 staff. In almost 25 a long time since its foundation Bank of Abyssinia has enlisted a critical development in paid up capital and add up to resource. As of now, 18.59 billion paid up capitals, add up to resource of Bank of Abyssinia has come to ETB 188.55 Billon (Jun 2023 report). Moreover, over 890 branches BOA serves over 10.2 million customers in the country (BOA, 2022).

2.2 Concept of Consumer Satisfaction

The concept of consumer satisfaction has been widely studied in the marketing literature. Researchers have conceptualized customer satisfaction as an individual's feeling of pleasure or disappointment resulting from comparing a product's perceived performance (or outcome) in relation to their expectations (Brady and Robertson, 2001; Lovelock, Patterson, and Walker, 2001).

The disconfirmation theory is the foundation of most customer satisfaction studies, which postulates that the feeling of satisfaction is a result of the comparison between perceptions of a product's performance and expectations (Oliver and Swan, 1989). Customer satisfaction is a highly personal assessment that is greatly affected by customer expectations and is based on the customer's experience of both contacts with the organization and personal outcomes (Smith, 2007; Melese Abebe, 2014).

In the banking sector, customer satisfaction is characterized as the number of people or percentage of total customers whose reported experience with the bank's products or services exceeds specified satisfaction goals (Raj, 2013). Customer satisfaction is associated with product quality, as incidents of satisfaction over time contribute to product quality perceptions (Hoe &

Mansori, 2018). Customer satisfaction can be seen as one of the most critical and vital variables for long-term business performance in the banking industry (Moraru & Duhnea, 2018). Customer satisfaction in the banking industry implies the degree to which consumer needs, wishes, and expectations of the services and products are met (Ali & Wan-Omar, 2016).

Overall, customer satisfaction measures how well a bank's products or services meet or exceed customer expectations, which often reflect many aspects of the bank's business activities, including the actual product, service, company, and how the company operates in the global environment (Smith, 2007).

Achieving high levels of customer satisfaction requires a deep understanding of customer needs, preferences, and expectations, as well as the ability to consistently deliver products and services that meet or exceed these expectations (Ali & Wan-Omar, 2016). This often involves ongoing customer feedback, continuous improvement, and a customer-centric organizational culture (Moraru & Duhnea, 2018). The measurement of customer satisfaction has become an essential aspect of business strategy, as it provides valuable insights into customer preferences, perceptions, and areas for improvement (Raj, 2013). Organizations often use a variety of metrics, such as customer satisfaction surveys, Net Promoter Scores, and customer retention rates, to track and monitor customer satisfaction levels (Hoe & Mansori, 2018).

2.3 Models of Customer Satisfaction

The customer satisfaction literature identifies four model types, which can be used to determine levels of customer satisfaction (Gunning, J G 2000). These alternative types are referred to as:

- The Disconfirmation of Expectation Model
- The Performance Model
- The Rational Expectations Model
- The Expectations Artefact Model

2.3.1 The Disconfirmation of Expectation Model

The Disconfirmation of Expectations Model is the most widely recognized and applied model of customer satisfaction (Jiasheng Zhang et al 2021). It proposes that customer satisfaction is determined by the discrepancy between a customer's pre-purchase expectations and their

perception of the actual product or service performance (David K Tse et al 2006). If the perceived performance meets or exceeds the customer's expectations, it results in a positive disconfirmation, leading to customer satisfaction. Conversely, if the perceived performance falls short of the customer's expectations, it results in a negative disconfirmation, leading to customer dissatisfaction (Florin Lucian and Sergiu Rusu, 2014). This model suggests that managing customer expectations is crucial, as it directly impacts their satisfaction levels.

2.3.2 The Performance Model

The Performance Model focuses solely on the perceived performance of the product or service, rather than the comparison between expectations and performance (Gunning, J G (2000). It suggests that customer satisfaction is determined solely by the customer's perception of the product or service performance, independent of their prior expectations (Yuksel Ekinci, 2006). This model is particularly useful in situations where customer expectations are difficult to measure or may not be a significant factor in determining satisfaction (Biljana, 2014). The performance model emphasizes the importance of delivering high-quality products and services that meet or exceed the customer's needs and preferences (Nitin Liladhar et al 2023).

2.3.3 The Rational Expectations Model

The Rational Expectations Model assumes that customers have rational and well-informed expectations about the product or service they are purchasing (Muth, 1961, Lucas, 1972). It suggests that customers form their expectations based on their past experiences, information from various sources, and their understanding of the market and the provider's capabilities (Lucy Lee 2012). In this model, customer satisfaction is determined by the extent to which the product or service meets the customer's rational and informed expectations (Nwatu Basil et al, 2021). The rational expectations model is useful in situations where customers have access to a wealth of information and are able to make informed decisions about their purchases (SJ. Grossman, 1981).

2.3.4 The Expectations Artefact Model

The Expectations Artefact Model challenges the assumption that customer expectations are a significant factor in determining customer satisfaction (Gunning, J G (2000). It suggests that customer expectations are not a direct cause of satisfaction, but rather a byproduct or "artifact" of the customer's overall experience and satisfaction with the product or service (Johnson et al.,

1996). In this model, customer satisfaction is primarily influenced by the customer's perception of the product or service's performance, as well as other factors such as their emotional reactions and the overall customer experience (Nwatu Basil et al 2021). The expectations artefact model is particularly useful in situations where customer expectations may be influenced by various external factors, such as marketing campaigns or industry benchmarks, rather than being a direct predictor of satisfaction (Hermann et al 2023).

When studying the effects of system disruptions on customer satisfaction, the Disconfirmation of Expectations Model would likely be the most suitable approach. System disruptions can directly affect the perceived performance of a product or service, leading to a mismatch between customer expectations and their actual experience. By examining the disconfirmation between expectations and perceived performance, researcher could gain insights into how system disruptions impact customer satisfaction levels.

2.4 Concept of Disruptions

Disruptions refer to significant changes or disturbances that interrupt or alter the normal course of events, processes, or systems. They can occur across various domains, including technology, business, industries, and society as a whole (Daniel Skog et al 2018).

Disruptions are often characterized by their transformative nature and the potential to create substantial shifts in established practices, structures and norms (Koutroumpis, P. and Lafond, F. 2018). They can bring about both positive and negative impacts, depending on the context and the ability of individuals and organizations to adapt (OECD 2020).

In the business context, disruptions are often associated with innovations that challenge traditional models, practices, and market dynamics (Christensen et al. 2015). They can arise from technological advancements, changes in consumer behavior and preferences, regulatory developments, or the emergence of new competitors.

Some examples of disruptions include:

1. **Technological Disruptions**: Advances in technology can disrupt industries and business models. For example, the rise of the internet disrupted the publishing and retail industries, while the advent of smart phones and mobile apps disrupted the telecommunications and entertainment sectors (Muyanja, 2023).

2. **Market Disruptions**: Changes in consumer demands, preferences, or expectations can disrupt established markets. For instance, the growing popularity of ride-hailing services disrupted the traditional taxi industry by offering a more convenient and cost-effective alternative (Pires, 2023).
3. **Regulatory Disruptions**: Changes in laws and regulations can disrupt industries by imposing new requirements or restrictions (Walker, 2019). For example, environmental regulations can disrupt industries by requiring companies to adopt more sustainable practices or phase out certain products.

According to Babych 2023, System disruptions in the banking sector refers to significant changes or disturbances that affect the core systems, processes, and operations of banks. These disruptions can arise from various factors, such as technological advancements, regulatory changes. System disruptions in the banking sector have the potential to reshape the industry, transform business models, and redefine the ways banks interact with customers and deliver financial services (Luigi Wewege, et al 2020).

2.4.1 Types of System Disruptions

The increasing use of banking operation technologies has led to many security and other related failures in the Banks (Cotton, 2018). Currently Banking operation system failures within the financial services sector appear to be becoming more common.

According to OECD mentioned that Disruptions can generally be categorized into two broad types: human-made disruptions and natural disruptions. Here's a breakdown of these two categories:

2.4.1.1 Human-Made Disruptions

2.4.1.1 Human-Made Disruptions

Human-made disruptions refer to disruptions caused by human actions or factors. These disruptions can include:

Technical Glitches: Technical glitches can occur due to hardware failures, software bugs, coding errors, or network issues within the banking systems (Lourdes O. Pilar, 2023).As per Vildata group report on 2021 the number of technical glitches in the banking industry has been increasing in the past couple of years.

According to the recent Consortium for Information & Software Quality (CISQ) report, America alone lost approximately $2.08 trillion in 2020 due to technical snag. Andrew and David (2023) stated that, banking system Glitch delays 900,000 payments on big pay day which caused serious inconveniences to their customers. Similarly Reuters reported August 10 2021 that several European financial institutions left stranded during the vital hours near the close of business due to a glitch in the European central bank's payment system. Then large number of users they lose their access to the system.

Moreover, Technical errors are not the case that happened only in the European and American banks, rather there is also in Asia and other continents(Elliott, D. 2014).Ayala-led bank, Regional Bank in India, in 2017 shut down its automated teller machines (ATMs) as well as online and mobile app-based facilities as it corrected an "internal data processing error" that doubled postings of transactions conducted between April 27 and May 2, 2017(Doris Dumlao, 2017).

Standard Bank, operating in various African countries, did experience a technical glitch in 2019 that affected its online banking and mobile app services. The glitch had an impact on customers across multiple countries, including South Africa, Zimbabwe, and Mozambique. While the exact number of people affected was not disclosed, Standard Bank's substantial customer base indicates that a significant number of individuals were likely impacted by the glitch (Bloomberg, 2021).

Cyber security Attacks: Cyber security attacks involve deliberate actions by individuals or groups to compromise the security of banking systems. These attacks can include hacking, phishing, malware infections, or other forms of cybercrime (Aslan Ömeretal, 2023).

According to World Economic Forum's White Paper: "Systemic cyber risk is the risk that a cyber-event (attack(s) or other adverse event(s)) at an individual component of a critical infrastructure ecosystem will cause significant delay, denial, breakdown, disruption or loss, such that services are impacted not only in the originating component but consequences also cascade into related (logically and/or geographically) ecosystem components, resulting in significant adverse effects to public health or safety, economic security or national security" (IMF,2016).

In recent years, there has been a significant uptick in the frequency and sophistication of attacks on the financial and banking industry. Financial institutions were the second most impacted sector based on the number of reported data breaches in 2022. Institutions in the U.S., Argentina, Brazil, and China were most affected (Rob Sobers, 2023).

Sentinel One reported that Ransom ware attacks on arise from 55% in 2022 to 64% in 2023, which is nearly double the 34% reported in 2021.Such attacks not only disrupt services but also lead to substantial financial losses and reputational damage.

Utility Failures: Utility failures, such as power outages or telecommunication network failures(Snow et al, 2020).According to (Steve M.et al 2021), note that when utility failures occur, service disruptions are a common consequence. Customers may find themselves unable to access essential banking services, including ATMs, online banking platforms, or mobile banking apps. This lack of access can hinder their ability to perform transactions, check balances, or carry out other necessary banking activities. Additionally, power outages can impact cash handling equipment, leading to cash shortages at ATMs or limited access to cash for customers. Transaction processing delays may also arise due to the loss of connectivity or functionality of payment network (Tanai et al, 2021).

The case of Northeastern Blackout of August 2003, the blackout, left 55 million people across eight states and parts of Canada without electricity. The power outage severely disrupted the banking operations, leading to the closure of several bank branches and ATMs. (Owens, 2019).

Regulatory Compliance Issues: Banks should adhere to laws, regulations, and industry standards set forth by regulatory authorities (Mekonen Kassahun and Melesse Asfaw 2014). So Banks may need to update their systems, processes, or documentation to meet new regulatory standards. Various studies have concluded that regulation can have positive or negative effects on various indicators of bank performance, including on various definitions of efficiency (Kale et al 2015). This is to be expected, since a regulation that is designed to, say, reduce risk by improving the quality of information on customers is likely to increase operational costs (and decrease banks' cost efficiency) (Jomini, 2011).

Elliot & Cäker (2017) argued that compliance issues can divert resources away from customer service, potentially leading to delays or inefficiencies in delivering services. Complex documentation and customer verification processes, such as KYC and AML measures, can also contribute to longer processing times for account opening, loan applications, and other transactions, affecting service efficiency and reduce the customer satisfaction (Norberg, M. 2022).

2.4.1.2 Natural Disruptions

Natural disruptions are events or incidents caused by natural phenomena or forces. These disruptions can include:

Natural Disasters: Natural disasters like earthquakes, floods, hurricanes, wildfires, or severe storms can damage bank facilities, disrupt power supply, or impact telecommunication networks. These events can result in the temporary closure of branches, unavailability of services, or damage to banking infrastructure (Nabil Touili, 2021).

Hurricane Katrina in USA (2005), Earthquake and Tsunami in Japan (2011) severely impacted the banking sector, with many branches and ATMs rendered inoperable due to damage and infrastructure issues. The disruption resulting Access to ATMs and online banking was severely limited, affecting customers' ability to carry out transactions (Ali Irfan, 2023).

Adverse Weather Conditions: Extreme weather conditions, such as heavy snowfall, dense fog, or severe thunderstorms, can affect banking operations, leading to delays or cancellations of bank-related services, including cash transportation or ATM replenishment (Nie et al 2023).

For instance Super storm Sandy (2012): Sandy affected the northeastern United States, particularly New York and New Jersey. The storm resulted in widespread flooding and power outages, leading to the closure of numerous bank branches and ATMs (M. Kunz et al, 2013).

2.5 Recovery Steps from System Disruptions

The recovery process from disruptions typically involves a series of steps to restore systems, operations, and services to their normal functioning state (Steve Fochler, 2023). Here is a general outline of the recovery process

1. **Incident Assessment**: No financial services business can adequately plan for disaster without understanding what those disasters look like (Tracy Rock, 2023). According to financial stability institute (2011) stated that, first perform comprehensive assessments that identify every possible interruption to their operations, the nature and extent of the disruption. Then determine the cause of the incident, evaluate the scope of the impact, and identify affected systems, processes, and services. This assessment helps in formulating an appropriate recovery plan.

2. **Activation of business continuity plan** (**BCP**): It's a plan that ensures personnel and assets are protected and are able to function quickly in the event of a disaster (Will Kenton, 2023). As per Avast Business Team, 2021 stated that Banks should activate their business continuity plan, which outlines predefined actions and procedures to be followed during disruptions. The BCP typically includes steps to activate backup systems, reroute services, and deploy alternative processes to ensure continuity of critical functions.

3. **System Restoration**: Banks work on restoring affected systems, databases, and infrastructure. This may involve repairing or replacing hardware, recovering data from backups, and implementing necessary software patches or updates. System restoration is typically prioritized based on criticality and customer impact (Leslie Acheson Wey, *2019)*

4. **Testing and Validation**: (Golubet et al 2016*)* stated that before fully resuming operations, conduct rigorous testing and validation of restored systems and processes. This includes conducting system checks, data integrity verification, and thorough testing of functionalities to ensure they are functioning as expected.

5. **Communication with Stakeholders**: Throughout the recovery process, maintain active and transparent communication with stakeholders, including customers, employees, regulators, and partners (Ihlen, Ø. (2012). Regular updates are provided to keep them

informed about the progress of recovery, expected timelines, and any temporary measures in place (Joon S.L, and Cary A. 2017)

6. **Customer Support and Assistance**: Prioritize customer support and assistance during the recovery phase (Qasim, 2012*)*. Dedicated customer service teams are deployed to address customer inquiries, provide guidance on alternative service channels, and assist with any issues or concerns arising from the disruption (Jagdish N et al 2023*)*.

7. Post-Incident Analysis and Improvement: Once the disruption is resolved, banks conduct a thorough post-incident analysis (NIST, 2012*)*. As per Mukherjee, 2023*)* described this involves reviewing the incident response, identifying areas for improvement, and implementing necessary changes to prevent similar disruptions in the future. Lessons learned are documented for future reference.

8. **Continuous Monitoring and Risk Mitigation**: continuously monitor systems and processes to detect any potential vulnerabilities or risks that could lead to future disruptions *(*Umasankar, 2023*)*. Implement risk mitigation measures such as enhanced security controls, regular system audits, and employee training programs to minimize the likelihood and impact of future incidents (Dawodu et al, 2023*)*.

Generally, the recovery process may vary between banks and depends on factors such as the nature of the disruption, the bank's size and complexity, regulatory requirements, and the specific recovery strategies and technologies employed *(*World Bank, 2009*)*.

2.6 The Relationship between Disruptions and Customer Satisfaction

The banking industry is heavily reliant on robust technology infrastructure and digital capabilities to deliver efficient and seamless services to customers (Shetty & Nikhitha 2022). Any disruption to these critical systems can have a significant impact on customer satisfaction (Jenny van et al 2008). Understanding this relationship is crucial for banks to maintain a competitive edge and ensure customer loyalty.

This relationship can be examined through the lens of the expectation-disconfirmation theory, which posits that customer satisfaction is determined by the gap between customers pre-service expectations and their perceived performance of the service received (Oliver, 1980). In the

banking context, customers expect a high level of reliability, accessibility, and responsiveness from their financial institution, particularly when it comes to the availability and functionality of the bank's technology systems (Ronny, 2022).

When service failures or disruptions occur, such as ATM downtime, mobile banking app crashes, or online banking portal outages, customers are often left frustrated and inconvenienced. These incidents can directly undermine the customer's perception of the bank's service quality and their overall satisfaction (Zeithaml et al., 2006). Customers may feel let down, as their expectations for a seamless and uninterrupted banking experience have not been met (Mark Grainger, 2024). According to research by PCR, 57% of digitally native millennials form a negative impression of a company’s brand due to website downtime. This statistic underscores how quickly customers can turn against a bank when they experience service disruptions, which can lead to a loss of trust and loyalty (Jon Lucas, 2024).

Moreover, the impact of disruptions on customer satisfaction can be amplified by the critical nature of banking services. Customers often rely on immediate access to their financial accounts and the ability to conduct transactions in a timely manner. Any interruption to these essential services can lead to significant stress, financial consequences, and a deterioration of the customer's trust in the bank (Bitner et al., 1990). As per Zhao et al., 2023 study indicated that 62% of customers reported experiencing significant stress when they were unable to access their banking services during emergencies or critical transactions.

The severity and duration of the system disruption can also play a role in shaping customer satisfaction. Prolonged outages or recurring technical issues can further erode customer confidence and loyalty, as they may perceive the bank as being unable to reliably deliver the services they expect (Keaveney, 1995).

In addition to the direct impact on customer satisfaction, service disruptions in the banking industry can also have broader implications. Dissatisfied customers may share their negative experiences with others, leading to reputational damage for the bank and a potential loss of future business (Wangenheim & Bayón, 2007). Moreover, regulatory bodies and government agencies may scrutinize the bank's handling of technology-related failures, potentially resulting in fines, sanctions, or increased oversight (Barros, 2014). The TSB Bank IT failure in 2018

serves as compelling event, in 2018, TSB Bank, a UK-based bank, experienced a major IT failure that left thousands of customers unable to access their accounts for several weeks (David Milliken et al, 2018). The incident resulted in reputational damage and financial losses for the bank (ShailaTemkar, 2023). Customers who were affected by the failure reported feeling anxious and betrayed, and some customers closed their accounts or reduced their engagement with the bank. In addition the Bank faced significant reputational damage, regulatory scrutiny, and legal actions, including fines and compensation payments to affected customer.

By addressing critical areas, banks can strengthen customer trust, enhance their competitive position, and ensure the long-term viability of their operations in the digital age.

2.7 Empirical Reviews

There exist distinctive inquire about works on impacts of disturbances on customer satisfaction in diverse division. Arifiani *e*t al 2019 study investigates the effects of disruptions on customer service and satisfaction in the telecommunications industry and, recommended that understanding the impact of these disruptions on service and satisfaction is crucial for service management.

Ganthan N. et al 2010, Itumalla, 2012, Mi Ok Kim, 2017, and Kwamboka et al 2019, examine the influence of IT system failures and its impact on patient care quality, efficiency, and satisfaction in healthcare industry. There studies proposed the need for reliable IT infrastructure and effective contingency planning to minimize the negative effects of disruptions on healthcare service. In addition Liza C. et al 2023 explore the effects of power outages on customer perceptions of electric utility service quality. So the study noted that effective outage management and communication in maintaining service quality.

Authors like Syed Mithun Ali, 2022, ShailaTemkar, 2023, Dr.Shamsher, 2011 and Dr G.P Dang et al, 2018 assess factors and the impacts of different aspects of disruptions on banking industry. Syed Mithun Ali et al, 2022 study evaluating factors contributing to the failure of information system in the banking industry, the researchers clarified that the

possible factors of and forward frameworks can be utilized to assist in efficient decision-making in other service industries where IT systems play a key role.

Temkar et al, 2023 examine the relationship between system downtime, transaction failures, and delivery of customer service. The findings highlight the negative effects of disruptions on customer service quality and provide insights into strategies for improving IT resilience. Dr.Shamsher, 2011 and Dr G.P Dang et al, 2018 studies identified impacts of ATM outages on customer satisfaction and emphasize the need for effective monitoring, maintenance, and service recovery strategies.

Hamid et al 2017 also tried to assess the relationship between security breaches, customer trust, and perceived service quality. The study proposed the importance of robust security measures, effective communication, and prompt resolution of security incidents to maintain service quality and customer satisfaction.

In Ethiopia, there are studies on the impacts of service disruptions in different sectors. Such as Sied Hassen and Tigabu Degu 2018 conducted studies on effects of internet connectivity disruptions on small and medium enterprises (SMEs) in Ethiopia. The study proposed the importance of stable and reliable internet connectivity for SME growth and development.

Daniel, 2015, Dr. A.Gajendran and Aregaw 2016, Hiwot 2019 examines the relationship between network disruptions, communication reliability, and customer perceptions in telecommunication industry. Authors identify negative effects of network outages on service quality and customer satisfaction, including dropped calls, poor internet connectivity. And they proposed possible service restoration mechanisms to enhance customer service.

Moreover, local researchers also tried to study the issue of disruptions in the banking sector from different perspectives. Like Ebisa, 2020, conducted the relationship between mobile banking disruptions, usability, and customer satisfaction. The findings highlight the negative effects of service disruptions on customer experience.

Tesfaye 2018 and Abeje et al 2022 made an attempt to reveal the negative impact of cyber security breaches on customer trust, leading to reduced engagement and decreased confidence in banking services. They conclude by emphasizes the importance of strong

cyber security measures, customer education, and effective incident response to maintain customer trust and enhance service quality in Ethiopian banks.

Even if those pervious researches focus on the different kinds (types) of service disruption effects in banking sector, comprehensively there is no local research on banking operation system disruptions issue for banking industry yet. Therefore, this study intends to shed light on the specific effects of disruptions on customer satisfaction and come up with suggestions for mitigate the negative consequences, and enhance customer service

2.8 Conceptual framework

The relationship between system disruptions and customer satisfaction can be summarized in the conceptual framework below

Independent Variables

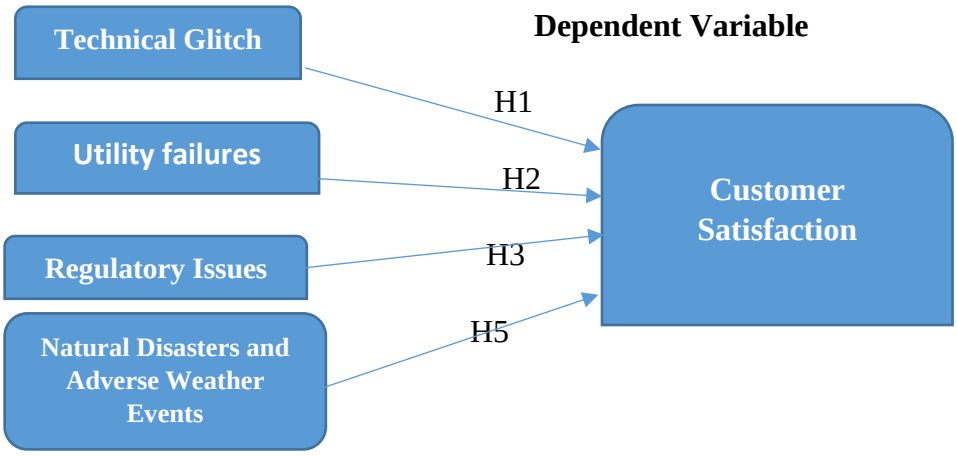


Fig 2.1 Conceptual framework

Adopted from Anderson et.al 2009, Kipkorir et.al 2021, Tanai et al, 2021

Technology outages, such as hardware failures, software issues can severely disrupt customers' ability to access their accounts, make transactions, and utilize online/mobile banking services. This interruption of critical banking activities can cause significant inconvenience and frustration for customers (Tanai et al, 2021, Finnerty, 2024).

Similarly, utility failures like power outages or internet connectivity problems can prevent customers from reaching the bank's physical branches or digital channels (**Sheila**, 2021).

Without the ability to complete transactions, access account information, or communicate with the bank, customers may experience heightened anxiety and dissatisfaction with the bank's service continuity (Nyakarudin, 2024).

Regulatory compliance issues, where changes in rules and regulations force the bank to modify its products, pricing, or procedures, can also directly impact customers (Malashch, 2024). Customers may feel confused or financially affected by these changes, and perceive the bank as prioritizing compliance over their needs and preferences, leading to a decline in customer satisfaction.

Finally, natural disasters and adverse weather events that damage or disrupt the bank's physical infrastructure can severely limit customers' access to their accounts and banking services. The resulting service interruptions and inability to manage their finances can lead to significant customer inconvenience, anxiety, and dissatisfaction with the bank's resilience (Allen et al, 2023).

Across these disruption types, common themes emerge that impact customer satisfaction. Customers may feel a sense of frustration, dissatisfaction, or reduced trust in the bank's competence and reliability (Temkar, 2014).

CHAPTER THREE

RESEARCH METHOLOGY

Introduction

This chapter discuss about the methodology used to conduct this study. The primary aim of the study was to examine the effect of system disruptions on customer satisfaction in the Bank of Abyssinia. This section clearly define the research approach and design, the sample and sampling techniques, sources and instruments that used to utilized in collecting data, the procedure of data collection and finally the method of data analysis will be presented as follows.

3.1 Research Approach

The research was conducted by using different methods, techniques and guidelines. However the most appropriate method of conducting this study was a mixed approach. Qualitative approach analyzes, interprets and collects data by studying people's behavior, the way they act and response (Creswell, 1994). Whereas qualitative research is where quantitative (numerical) measures were used to analyze and interpret data.

In the view to serve the research questions and objectives of the study, the researcher was following both mixed approach. Because, the researcher believe these methods of data analysis was appropriate to correctly answer the research questions under consideration.

3.2 Research Design

A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure (Kalkidan 2022). In fact the research design incorporates type and source of data, method of data collection and sampling strategy (Saunders, Lewis &Thornhill 2012). In this study the researcher was used both descriptive and explanatory analysis. The descriptive explains elements used to measure effects of system disruptions on customer satisfaction. The explanatory design was used to examine the relationship and effect among the variables of the study.

3.3 Target Population

Population is a distinct or set of people, services, elements, events, group of things or households which are being examined (Ngechu, 2004). The target populations of the study was customers of bank of Abyssinia where located at Addis Ababa city branches. The bank has three districts in Addis Ababa having 350 branches.

The methodology for this study employs a combination of sampling techniques to ensure comprehensive data collection. Initially, four branches—Arada, Addisu Gebeya, Bole Corporate, and Megenagna—were selected through purposive sampling. This selection was based on their high number of active customers and transaction volume, as indicated in the bank's annual report (June 2023). This approach ensures that the branches chosen are relevant to the study's objectives.

Table 3.1 Target Population

No	**Branches Name**	**No of Customers**
1	Addisu Gebeya	35,140
2	Arada	40,324
3	Bole Corporate	68,021
4	Megenagna	30,110
Total		**173,595**

Source: **Annual report of BoA June**, **2023**

3.4 Sampling Techniques and Sample Size Determination

To achieve a representative sample, customers were then randomly selected using a proportionate random sampling technique. A total of 399 customers were targeted for the study, a number determined based on statistical considerations for adequate representation.

The sample size was calculated using Yamane's (1967) formula, which provides an approach for determining sample sizes at a 95 percent confidence level. The formula is expressed as:

$$n = \frac{N}{1 + N(e)^2}$$

Where; n = sample size

N = total number of customers in 4 branches

e = margin errors at 5 percent

$$n = \frac{173595}{1 + 173595(0.0025)} = 399$$

Consequently, the total sample size is confirmed as 399. Since the number of customers in each branch varies, a proportionate allocation of the sample was necessary, calculated using the formula:

$$n = \frac{nN1}{N}$$

Where; n = total number of sample

N = total number of population

N1 = total number of population in each branch

Table 3.2 Sample Size

No	**Name of Branches**	**No of Populations**	**Sample**
1	Addisu Gebeya	35,140	81
2	Arada	40,324	92
3	Bole Corporate	68,021	156
4	Megenagna	30,110	70
Total		**173595**	**399**

For data collection, a convenience technique was employed, allowing researcher to engage with customers who were readily available and willing to participate at the time of the survey. This practical approach facilitated efficient data gathering while still aiming to capture a representative sample of the target population.

3.5 Types of Data and Technique of Data Gathering

3.5.1 Sources of Data and Data Type

To attain the essential information form respondents, two types of data gathering instruments were applied. Based on availability of time and resources, the researcher was used questionnaires and interviews as primary data's. Secondary data source like books, documents, research papers, journals and publications. The collected data was investigated and organized using quantitative approach.

3.5.2 Method of Data Gathering

For the proper achievement of the objectives of the study, among different primary data collection methods, questionnaire was used. Close ended questions were prepared to collect quantitative data from respondents. The questionnaires and unstructured interviews were prepared and distributed. The questionnaire was prepared for customers and interview questions were for branch managers. The variable was measured using Likert sale with five response categories ordinarily. The Likert Scale method is preferred to make questions interesting to respondents and thereby enhance their cooperation (Scott and Gerald, 2010).

3.6 Method of Data Analysis

The collected data were systematically analyzed and interpreted to transform them into meaningful insights, figures, and statements, in line with the nature of the data. The Statistical Package for Social Sciences (SPSS) software was employed to process and present the data through various statistical tools, including descriptive analysis, correlation analysis, and multiple linear regression analysis.

Descriptive analysis provided a comprehensive overview of the data, with results displayed in tables, frequency distributions, and percentages. This format offered a clear and concise representation of the findings. Additionally, Pearson correlation analysis was utilized to examine the relationships between system disruptions and customer satisfaction, employing Pearson's correlation coefficient to quantify the strength and direction of these relationships.

To further investigate the impact of system disruptions on customer satisfaction, multiple linear regression analysis was carried out. The regression model was constructed around two sets of

variables: dependent and independent. This methodology allows for the examination of relationships between multiple independent variables and a single dependent variable simultaneously. The primary objective of using the regression equation is to enhance the researcher ability to describe, understand, predict, and control the relationships among the specified variables.

3.6.1 Regression Analysis

Here are multi-linear regression equations that regress customer satisfaction on system disruptions, with clearly defined variables.

The regression equation formulated as follows:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$

Where: - Y is the dependent variable (customer satisfaction)

- X_1 is the independent variable representing Technical Glitch
- X_2 is the independent variable representing Utility failure
- X_3 is the independent variable representing Regulatory Disruptions
- X4 is the independent variable representing Natural Disasters and Adverse Weather Events
- β_0 is the constant or intercept term
- β_1, β_2, β_3 and β_4 are the regression coefficients that represent the change in Y associated with a unit change in the respective independent variables

3.7 Validity and Reliability

Validity refers to the extent to which a measuring instrument accurately assesses what it is intended to measure, encompassing the credibility and trustworthiness of the research findings. To ensure validity in this study, the questionnaires and interviews were developed based on established instruments from previous studies and a thorough review of related literature. This approach helps ensure that the questions effectively capture the constructs they aim to measure.

Reliability, on the other hand, measures the internal consistency of the instrument. It reflects the consistency of responses across different constructs and indicates the stability of scores over time when the instrument is administered (Creswell, 2009). A Cronbach's alpha value closer to 1.0

signifies greater internal reliability of the items within the measure. The variables were developed for this study comprising a total of 21 questions (17 related to system disruptions and 4 concerning customer satisfaction) were assessed for reliability using Cronbach's alpha coefficient through SPSS Version 29. The calculated Cronbach's alpha was found to be 0.820, indicating a high level of internal consistency

Table 3.3 Reliability Test by Cronbach's Alpha Test

NO	Items	Cronbachs alpha (α)	Remarks
1	Technical Glitch	0.8453	Good Reliability
2	Utility failures	0.719	Good Reliability
3	Regulatory Issues	0.767	Good Reliability
4	Natural Disasters and Adverse Weather Events	0.792	Good Reliability
5	Customer Satisfaction	0.784	Good Reliability

The reliability analysis indicates that most items related to system disruptions and customer satisfaction possess good reliability, making the survey instrument effective for measuring these constructs. Thus, results were considered suitable and appropriate for proceeding with further analysis.

3.8 Ethical Considerations

The researcher ensured that the consent of the clients was obtained, as he utilized data collected from customers through the questionnaire. To protect the anonymity of the information provided by the respondents, the participants were not required to write their names on the questionnaire. Moreover, the researcher clarified that the respondents' comments would be used solely for academic purposes and kept private. In the introductory section of the questionnaire, the researcher provided a clear description of the central objectives or purpose of the study, as well as the potential benefits of the research outcome to both the respondents and Bank of Abyssinia (BoA).This introductory information was intended to motivate the participants to engage in the study and provide relevant insights about the company under investigation. Lastly, the selection of participants was based on their willingness to take part in the study. The researcher did not coerce or compel individuals to participate, but rather allowed for voluntary involvement.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter focuses on presenting and analyzing the data obtained from customers at the selected branches through questionnaires. It also includes insights gained from interviews with branch managers and director. By integrating both quantitative and qualitative data, this chapter aimed to provide a well-rounded understanding of the research findings and their implications.

4.1 Overview of Data Collection and Response Rate

Data's were collected from sampled customers at the selected branches. A total of 399 questionnaires were distributed, with 351 completed accurately. Thirty questionnaires were rejected due to missing data, and 18 were returned unfilled. Therefore, 351 questionnaires were utilized for analysis, resulting in a return rate of 87.96%, which is deemed suitable for further analysis and drawing conclusions.

4.2 Respondents Demographics

4.2,1 Gender

Out of the respondents, 41.6 % were female and 58.4 % were male. We can see than majority of customers were male.

Table 4.1 Gender

		Category	**Frequency**	**Percent**
Gender		**Male**	205	58.4
		Female	146	41.6

Source- survey result, 2024

4.2.2 Age

The age range in the questionnaire shows majority (65.5%) of the respondents indicated they were in between 25-40 years. Specifically less than 25 age range represented about 21.9% of the respondents, and 25 – 40 was 65.5%, while greater than 40 years was 12.5 %.

Table 4.2 **Age**

	Category	**Frequency**	**Percent**
Age	less than 25 years	77	21.9
	25-40 years	230	65.5
	Greater than 40 years	44	12.5

Source- survey result, 2024

4.2.3 Marital status

The marital status data reveals that a majority of respondents are single (55.0%), compared to married individuals (45.0%).

Table 4.3 marital status

	Category	**Frequency**	**Percent**
Marital status	Single	193	55
	Married	158	45

Source- survey result, 2024

4.2.4 Customer Visiting Experience

It's clearly indicated in the above table that majority (61.8%) of the customers had an experience visiting the bank daily, followed (16.2 %) by those who visit monthly. Only 13.4 % has visit the bank weekly.

Table 4.4 Customer Visiting experience

How often do you Visit the bank?		
	Frequency	Percent
Daily	217	61.8
Weekly	47	13.4
Monthly	57	16.2
Other	30	8.5
Total	351	100

Source- survey result, 2024

4.2.5 Customer Experience to the Bank

With regard to number of years that has been as customer of the bank. Majority (56.4%) of participants have been 1-5 years, followed by those who have been above 5 years (25.1%). While the least number of respondents (18.5%) respond that they have been 0-1 years.

Table 4.5 Customer Experience to the Bank

How long have you been a customer of the bank?		
	Frequency	Percent
0-1 YEARS	65	18.5
1-5 YEARS	198	56.4
ABOVE 5 YEARS	88	25.1
Total	351	100.0

Source- survey result, 2024

4.3 System Disruptions

4.3.1 Technical glitch

The results from Table 4.3.1 indicated that there is high mean scores across the different aspects of technical disruptions suggest that customers strongly agree that technical problems with the bank's digital services significantly interfere with their transactions, with a mean score of 4.51. Customers also feel that outages in digital banking make it very hard for them to manage their finances, with a mean of 4.43. Furthermore, the data shows that customers experience high levels of frustration when delays or failures occur in their digital transactions due to the bank's technical issues, with a mean score of 4.48.

While the bank appears to be making efforts to address these technical problems, the relatively lower mean score of 4.38 for the bank's communication about technical issues and resolution updates indicates that customers feel there is still room for improvement in this area. The overall mean score across all technical glitch factors is 4.45, with a low standard deviation of 0.354, suggesting a strong consensus among customers on the significantly disruptive impact of these technical disruptions.

Table 4.6 Result of technical glitch

	Descriptive Statistics	Mean	Std. Deviation
Technical glitch	Technical problems with the bank's digital services significantly interfere with my transactions	4.51	.501
	Outages in digital banking make it hard to manage my finances.	4.43	.4.95
	I feel very frustrated when delays or failures in digital transactions occur due to the bank's technical issues.	4.48	.500
	The bank communicates proactively about technical issues and provides updates on their resolution.	4.38	.486
Over all		4.45	.354

Source- survey result, 2024

4.3.2 Utility Failure

The data suggests that utility disruptions have substantially hindered customers' ability to access the bank's services and manage their finances. Customers strongly agree that utility failures have impacted the availability of the bank's offerings (mean=4.25) and prevented them from accessing their accounts or completing critical transactions (mean=4.26). This disruption has made it markedly difficult for customers to tend to their financial affairs in a timely manner (mean=4.29).

While customers feel the bank has provided adequate support and alternative options when physical facilities were affected by utility issues (mean=4.22), they are slightly less satisfied with the bank's communication about these service disruptions and updates on service restoration (mean=4.17).

Table 4.7 Result of Utility Failures

	Descriptive Statistics	Mean	Std. Deviation
Utility failure	Utility disruptions have impacted the availability of the bank's services.	4.25	.442
	Utility failures have prevented me from accessing my accounts or completing important transactions	4.26	.442
	It made difficulty for me to manage my finances in a timely manner.	4.29	.526
	The bank provided good support and alternatives when there were physical facility issues.	4.22	.414
	The bank communicates about utility-related service disruptions and provides updates on restoration.	4.17	.380
Over all		4.24	.32

Source- survey result, 2024

4.3.3 Regulatory Compliance Issues

The data reported that changes in banking regulations have created significant disruptions to their typical banking experiences. They find it quite difficult to complete their regular transactions due to the regulatory changes (mean=4.11), and struggle to adapt to the new banking procedures and requirements that result from these updates (mean=4.26). The process of updating their account information and settings in response to regulatory changes is also described as time-consuming by customers (mean=4.23).

While the bank's communication about the regulatory changes and their impacts is viewed as somewhat clear and helpful by customers (mean=4.20), there appears to be room for

improvement in this area. Overall, the mean score across all the regulatory compliance factors is 4.19, with low variance, indicating a broad consensus among customers regarding the disruptive nature of these regulatory changes on their banking experience.

Table 4.8 Result of Regulatory Compliance Issues

	Descriptive Statistics	Mean	Std. Deviation
Regulatory compliance issues	Changes in banking regulations make it difficult for me to complete my regular transactions.	4.11	.308
	I struggle to adapt to new banking procedures and requirements resulting from regulatory changes.	4.26	.437
	Updating my account information and settings due to regulatory changes was time-consuming.	4.23	.433
	The bank's communication about regulatory changes and their impact is clear and helpful.	4.20	.416
Over all		4.19	0.28

Source- survey result, 2024

4.3.4 Natural Disasters and Adverse Weather Conditions

The data indicates that natural disasters and adverse weather have significantly disrupted the bank's ability to provide services (mean=4.23). Customers report that these natural events have prevented them from accessing their accounts and completing transactions (mean=4.24). They also find it quite difficult to manage their finances when disruptions are caused by natural disasters or adverse weather (mean=4.35).

Customers feel the bank does communicate proactively about service disruptions caused by natural events and the restoration of those services (mean=4.32).

Overall, the mean score across all factors related to natural disasters and adverse weather is 4.28, with low variance, suggesting a broad consensus among customers on the substantial impact of these events have had on their banking experience and financial management.

Table 4.9 Result of Natural Disasters and Adverse Weather Conditions

	Descriptive Statistics	Mean	Std. Deviation
Natural Disasters and Adverse Weather Conditions	Natural disasters or adverse weather have disrupted the bank's ability to provide services.	4.23	.420
	Natural events have prevented me from accessing my accounts or completing transactions.	4.24	.426
	It is difficult for me to manage my finances when disruptions are caused by natural disasters or adverse weather.	4.35	.484
	The bank communicates proactively about natural disaster or weather-related service disruptions and restoration.	4.32	.473
Over all		4.28	0.32

Source- survey result, 2024

4.4 Customer satisfaction

The data presents a mixed picture of customer satisfaction with the bank. While customers have a strong willingness to recommend the bank (mean = 4.36, SD = 0.482), they only somewhat agree that the bank consistently meets their expectations (mean = 3.42, SD = 0.494) and are moderately satisfied with the bank's customer service (mean = 3.58, SD = 0.449) and the perceived value they receive (mean = 3.53, SD = 0.472).

However, the overall customer satisfaction is relatively high (mean = 4.34, SD = 0.34), suggesting that customers are generally quite satisfied with the bank. The variability in the individual satisfaction metrics indicates that the bank should focus on improving consistency in meeting customer expectations, enhancing customer service, and providing greater perceived value to further enhance the overall customer experience and maintain high levels of satisfaction and loyalty.

Table 4.10 Customer Satisfaction

Customer satisfaction		**Mean**	**Std. Deviation**
	The bank consistently meets my expectations for a positive banking experience.	3.42	.494
	I would recommend this bank to friends, family, or colleagues.	4.36	.482
	The bank's overall customer service has been excellent.	3.58	.449
	I am generally satisfied with the value I receive from this bank	3.53	.472
Over all		**4.34**	**0.34**

Source survey results, 2024

4.5 Inferential Statistics /Analysis/

Regression examination is a scientific measure of the normal association among two or more variables in relations of the unique units of the data (Sonny Rosenthal, 2017). Regression obviously designates the cause- and-effect association among the variables. In regression, the variable conforming to cause is taken as independent variable and the variable matching to consequence is taken as dependent variable (Wondeson Beyene, 2022).

4.5.1 Correlation Analysis

A correlation is a degree of how powerfully two variables link to each other. Correlation coefficients are frequently used to describe data because they are relatively easy to use and provide a great deal of information in just a single value (Mooi&Sarstedt, 2011). The calculated significance of the correlation figure ranges from -1 to 1, where -1 directs a pure negative relation, the relationship is perfectly linear) and 1 indicates a perfectly positive relationship. A correlation figure of 0 specifies that no association (Mooi&Sarstedt, 2011)

Table 4.11 Correlation Analysis

Correlations						
		Technical Glitches	Utility Failures	Regulatory Compliance Issues	Natural Disasters and Adverse Weather Conditions	Customer Satisfaction
Technical Glitches	Pearson Correlation	1				
	Sig. (2-tailed)					
Utility Failures	Pearson Correlation	-.282	1			
	Sig. (2-tailed)	.000				
Regulatory Compliance Issues	Pearson Correlation	.253**	.139	1		
	Sig. (2-tailed)	.000	.009			
Natural Disasters and Adverse Weather Conditions	Pearson Correlation	.143	-.003	.119	1	
	Sig. (2-tailed)	.007	.003	.026		
Customer Satisfaction	Pearson Correlation	-.218	-.444	-.104	-.189	1
	Sig. (2-tailed)	.000	.000	.003	.000	
**. Correlation is significant at the 0.01 level (2-tailed).						
*. Correlation is significant at the 0.05 level (2-tailed).						

Source: Survey result, 2024

The correlation analysis provides insights into the relationships between the independent variables (Technical Glitches, Utility Failures, Regulatory Compliance Issues, and Natural Disasters and Adverse Weather Conditions) and the dependent variable (Customer Satisfaction). Technical Glitches have a negative and statistically significant ($p < 0.01$) correlation with Customer Satisfaction, with a Pearson Correlation of -0.218. This indicates that as the frequency of technical glitches increases, customer satisfaction tends to decrease.

Similarly, Utility Failures also have strongest a negative and statistically significant ($p < 0.01$) correlation with Customer Satisfaction, with a Pearson Correlation of -0.444. This suggests that as the frequency of utility failures increases, customer satisfaction tends to decrease.

Regulatory Compliance Issues have a negative and statistically significant ($p < 0.01$) correlation with Customer Satisfaction, with a Pearson Correlation of -0.104. This implies that Regulatory Compliance Issues have a significant negative impact on customer satisfaction. The negative correlation is observed between Natural Disasters and Adverse Weather Conditions and Customer Satisfaction, with a Pearson Correlation of -0.189 and a significance level of $p < 0.01$.

This indicates that as the frequency of natural disasters and adverse weather conditions increases, customer satisfaction tends to decrease the most among the variables considered.

Overall, the correlation analysis suggests that all the independent variables have significant negative relationships with Customer Satisfaction, with utility failure having the most substantial impact.

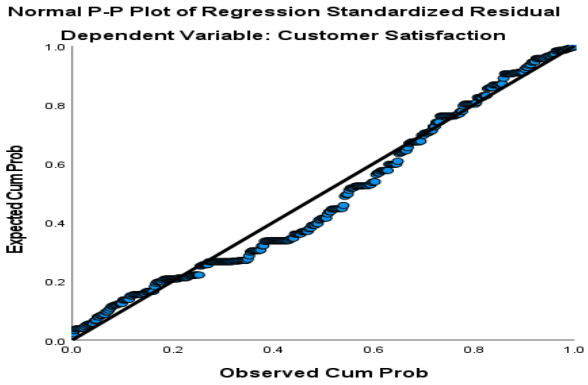
4.5.2 Assumption Tests

Before applying regression analysis, some tests were performed to ensure the appropriateness of data to the assumptions of multiples linear regression analysis.

4.5.2.1 Linearity Assumptions

The regression pattern can be articulated in a linear way. Testing the linearity using y and x variables can be completed by scheming the independent variable in contradiction of the dependent variables (Mooi & Sarstedt, 2011). The purpose of normality test is to check whether the regression model of the underlying factors of disruption have normal distribution or confirm non-violation of linearity assumption prior to conducting multiple linear regression analysis. As figures below shows, the relationship of independent variable with the dependent variables are linear.

Figure 4.1 Linearity Assumptions



4.5.2.2 Multicollinearity Test

As per (Vorosmarty and Dobos, 2020) stated that examination of multicollinearity based on VIF (variance inflation factor) check results:

1. If the VIF value lies between 1and 10, then there is no multicollinearity.

2. If the VIF < 1 or >10, then there is multicollinearity.

Table 4.12 Collinearity Statistics

Coefficients[a]			
Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Technical Glitches	.822	1.216
	Utility Failures	.873	1.145
	Regulatory Compliance Issues	.882	1.133
	Natural Disasters and Adverse Weather Conditions	.972	1.029
a. Dependent Variable: Customer Satisfaction			

Source- survey result, 2024

The tolerance values represent the proportion of the variance in each dependent variable that is not explained by the other dependent variables (correlation) in the model (Oke et al, 2019). In this case the tolerance values range from 0.822 to 0.97 indicates that the variable is not highly correlated with the other variables. The VIF measures how much the variance of a regression

coefficient is inflated due to multicollinearity in the model (Akinwand et al, 2015). The VIF values range from 1.029 to 1.216, which are all well below the commonly used threshold of 5 or 10. This suggests that multicollinearity is not a major concern in this dataset. Therefore the datasets fulfilled the assumption of no multicollinearity, which one of the key requirement for conducting valid multiple linear regression analysis.

4.5.2.3 No Significant Outlier

No significant outlier refers to the condition where there are no observations in the data that are drastically different from the rest of the data points (Abikesh et al, 2020). Outliers can have a significant influence on the results of a regression analysis, so it's important to check for their presence and address them appropriately.

The Residuals Statistics table indicates that the assumption of no significant outliers is fulfilled in the regression analysis. The minimum and maximum values of the Residuals and Standardized Residuals are within the typical range of approximately -3 to +3 standard deviations, suggesting the absence of extreme or influential outliers. Additionally, the standard deviation of the Standardized Residuals is close to the ideal value of 1.0, further confirming the well-behaved distribution of the residuals

Table 4.13 Residuals Statistics

Residuals Statistics					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.0622	3.0031	4.3483	.17954	351
Residual	-.58381	.82857	.00000	.28574	351
Std. Predicted Value	-1.593	3.647	.000	1.000	351
Std. Residual	-2.031	2.883	.000	.994	351
a. **Dependent Variable:** Customer Satisfaction					

Source- survey result, 2024

Overall, the statistical information provided suggests that the data is well-distributed, with no extreme or anomalous observations that could be considered outliers. This fulfilled the assumption of no significant outliers, which was crucial for multiple linear regressions.

4.5.2.4 Autocorrelation Assumption

The autocorrelation assumption is the assumption that the residuals (the differences between the observed and predicted values) are independent of each other (Bradley Huitema et al 2009). This means that the value of one residual should not be related to the value of another residual. Thus the most commonly used statistical test to detect the presence of autocorrelation in the residuals is the Durbin Watson test.

The Durbin-Watson statistic in table 4.6 is 1.85 which provides evidence that there is no significant positive or negative autocorrelation present in the residuals. This means that the regression model does not violate the assumption of independent errors.

4.5.2.5 Homoscedasticity

Homoscedasticity is an important assumption in multiple linear regression analysis. It refers to the condition where the variance of the residuals (the differences between the observed and predicted values) is constant across all levels of the predictor variables. In the context of the scatterplot provided, the homoscedasticity assumption appears to be satisfied, as the data points are evenly scattered around the horizontal line, without any clear funnel-shaped or fanning pattern that would indicate heteroscedasticity.

Fig 4.2 Homoscedasticity

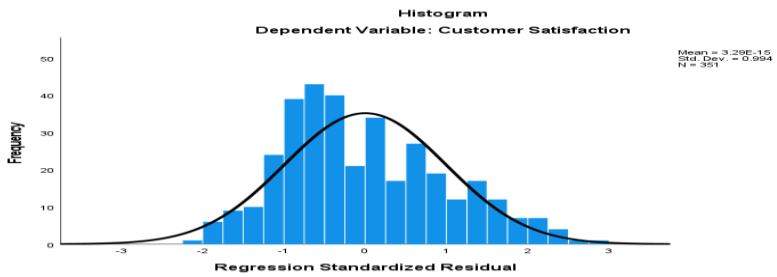
Source- survey result, 2024

The above scatter plot showed lack of any clear funnel-shaped or fanning pattern suggests that the assumption of homoscedasticity, or constant variance of the residuals, is likely satisfied. The residuals appear to maintain a similar level of dispersion across the range of predicted values

4.5.2.6 Normality Assumption

The histogram shows a bell-shaped curve, which is characteristic of a normal distribution. The mean value of the standardized residuals is close to 0 (3.2.9e-15), and the standard deviation is 0.993, indicating that the residuals are centered around 0 and have a standard deviation close to 1, as expected for a normally distributed variable. Therefore, the information provided in the histogram indicates that the normality assumption for the residuals in the multiple linear regression analysis is likely satisfied**.**

Fig 4.3 Normality Assumption



Source survey result 2024

4.6 Regression Model Summary

The regression model summary presents the coefficient of determination, known as the R-squared (R Square) statistic, is a crucial metric in evaluating the goodness-of-fit and explanatory power of the regression model. In the given Regression Model Summary, the R-squared value is reported as 0.283

The R-squared value of 0.283 indicates that the regression model explains 28.3% of the total variance in Customer Satisfaction. This suggests that the four independent variables included in the model are able to capture and account for approximately 28.3% of the fluctuations observed in the dependent variable. Conversely, the remaining 71.7% of the variation in Customer Satisfaction is attributed to other factors not represented in the current model specification.

Table 4.14 Model Summary

Model Summary										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	-.532	.283	.275	.28739	.283	34.148	4	346	.000	1.85
a. Predictors: (Constant), Natural Disasters and Adverse Weather Conditions, Utility Failures, Regulatory Compliance Issues, Technical Glitches										
b. Dependent Variable: Customer Satisfaction										

Source- survey result, 2024

4.6.1 Regression coefficient

From the Table 4.6.1 , we can observe the relative magnitude to which the independent variables influence customer satisfaction. Among the factors examined, utility failures have the strongest negative influence on customer satisfaction. The standardized coefficient of -0.415 indicates that a one-unit increase in the occurrence of utility failures is associated with a 0.415-unit decrease in customer satisfaction, holding all other factors constant. This suggests that utility failures have a substantial detrimental effect on how customers perceive the organization's service during disruptions.

Technical glitches, with a standardized coefficient of -0.245, also have a significant adverse impact on customer satisfaction. As the occurrence of technical issues rises, customers' perceptions of the organization's ability to handle disruptions deteriorate.

Regulatory compliance issues, though the least impactful among the factors considered, still exhibit a statistically significant negative relationship with customer satisfaction. The standardized coefficient of -0.045 suggests that increases in regulatory compliance problems are associated with a relatively smaller, but still meaningful, decline in customer satisfaction.

Finally, the analysis revealed that natural disasters and adverse weather conditions have a substantial negative effect on customer satisfaction. A one-unit increase in the occurrence or severity of these events is associated with a 0.284-unit decrease in customer satisfaction. The standardized coefficient of -0.265 indicates that a one-standard-deviation increase in natural disasters and adverse weather conditions is linked to a 0.265-standard-deviation decrease in customer satisfaction.

Overall, the regression analysis provides clear evidence that all four independent variables – technical glitches, utility failures, regulatory compliance issues, and natural disasters and adverse weather conditions – have a statistically significant negative impact on customer satisfaction during service disruptions.

Table 4.15 Coefficients

Coefficients						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**
		B	**Std. Error**	**Beta**		
1	**(Constant)**	**.458**	**.067**		**1.173**	**.001**
	Technical Glitches	**-.234**	**.048**	**-.245**	**4.890**	**.000**
	Utility Failures	**-.437**	**.049**	**-.415**	**8.982**	**.000**
	Regulatory Compliance Issues	**-.053**	**.057**	**-.145**	**0.924**	**.003**
	Natural Disasters and Adverse Weather Conditions	**-.284**	**.052**	**-.265**	**5.449**	**.000**
a. Dependent Variable: Customer Satisfaction						

4.7 Hypothesis Test

Based on the regression analysis results provided, the hypotheses could be tested and summarized as follows:

H1: Technology outages have a significant negative impact on customer satisfaction at Bank of Abyssinia.

The standardized coefficient for "Technical Glitches" is -0.245, which is negative and statistically significant ($p < 0.001$). This indicates that a one-standard-deviation increase in technical glitches is associated with a 0.245-standard-deviation decrease in customer satisfaction, holding all other variables constant. Therefore, we can conclude that Hypothesis 1 is supported.

H2: Utility disruptions have a significant negative influence on customer satisfaction at Bank of Abyssinia.

The standardized coefficient for "Utility Failures" is -0.415, which is negative and highly statistically significant ($p < 0.001$). This means that a one-standard-deviation increase in utility

failures is associated with a 0.415-standard-deviation decrease in customer satisfaction, all else being equal. This suggests that utility disruptions have a strong negative impact on customer satisfaction. Therefore, Hypothesis 2 is supported.

H3: Regulatory issues have a significant negative impact on customer satisfaction at Bank of Abyssinia.

The standardized coefficient for "Regulatory Compliance Issues" is -0.145, which is negative and statistically significant ($p = 0.003$). This indicates that a one-standard-deviation increase in regulatory compliance issues is associated with a 0.145-standard-deviation decrease in customer satisfaction, holding other variables constant. While the effect size is smaller compared to the other factors, the relationship is still statistically significant. Therefore, Hypothesis 3 is supported.

H4: Natural disasters and adverse weather events have a significant negative influence on customer satisfaction at Bank of Abyssinia.

The standardized coefficient for "Natural Disasters and Adverse Weather Conditions" is -0.265, which is negative and highly statistically significant ($p < 0.001$). This means that a one-standard-deviation increase in the occurrence or severity of natural disasters and adverse weather conditions is associated with a 0.265-standard-deviation decrease in customer satisfaction, all else being equal. This confirms the substantial negative impact of these events. Therefore, Hypothesis 4 is supported.

In summary, using the standardized regression coefficients, all four hypotheses (H1, H2, H3, and H4) are supported, as the analysis shows that the independent variables have a statistically significant negative impact on customer satisfaction at Bank of Abyssinia.

4.8 Qualitative Analysis of BoA managers and Director Response

As per the selected Branch Managements and the BoA IS director revealed that maintaining customer satisfaction during system disruptions is a critical challenge faced by Bank of Abyssinia (BOA).

Bank of Abyssinia has implemented a variety of strategies to enhance customer satisfaction in the face of disruptions, including technological failures, infrastructural issues, adverse weather

conditions, and regulatory challenges. These initiatives focus on proactive communication with customers, ensuring they are informed about potential disruptions and the measures being taken to address them. The bank also offers alternative solutions, such as extended service hours and compensation for inconveniences, to maintain customer trust and loyalty. Training programs for staff are regularly conducted to equip them with the necessary skills to assist customers effectively during these challenges.

To facilitate communication during adverse conditions, the bank employs a multi-channel strategy that includes SMS alerts, email notifications, updates on the bank's website, and announcements through social media platforms. This approach guarantees that customers receive timely and relevant information regarding service availability and ongoing issues. Additionally, in-branch signage is utilized to keep customers informed during their visits.

In terms of data security, the bank implements comprehensive measures to ensure that customer information and transactions are protected during disruptions. These measures include data encryption, regular security audits, and real-time monitoring of systems for vulnerabilities. Furthermore, staff training on data protection protocols reinforces best practices for safeguarding customer information during challenging situations.

The bank utilizes various technological solutions to maintain service continuity during disruptions. For instance, a cloud-based infrastructure provides redundancy and quick recovery options during technological failures. Backup power systems, such as generators, are in place to ensure operations continue during power outages. Additionally, mobile banking applications allow customers to access their accounts and perform transactions remotely, thereby minimizing the impact of physical disruptions.

Collaboration among different departments is essential for ensuring a coordinated response to disruptions. The bank fosters interdepartmental teamwork through regular planning meetings and the establishment of cross-functional teams. This collaborative approach ensures that all departments are informed and aligned in their strategies, facilitating a swift and effective response to any disruptions that may arise.

Finally, when developing the Bank disruption management and mitigation strategies, the management carefully considers the relevant regulatory requirements and industry standards.

This includes adherence to the National Bank of Ethiopia's directives on business continuity management and operational risk and INSA Cyber security Framework. BOA also collaborates with regulatory bodies and industry associations to stay informed about emerging best practices and compliance requirements, and conducts regular audits and assessments to ensure its systems and processes meet or exceed regulatory expectations.

4.9 Discussion

The findings of this study provide critical insights into the relationships between operational factors and customer satisfaction at the Bank of Abyssinia (BoA). The analysis reveals that technical glitches, utility failures, regulatory compliance issues, and natural disasters significantly negatively impact customer satisfaction. Specifically, utility failures exhibit the strongest negative effect, with a standardized coefficient of -0.415, indicating that even minor increases in utility disruptions can lead to substantial declines in customer satisfaction. This underscores the essential nature of reliable service delivery in the banking sector. This finding resonates with Vorosmarty and Dobos (2020), and (Samuel, 2024) who highlighted that service disruptions severely erode customer trust and loyalty, suggesting that even minor utility disruptions can lead to substantial declines in satisfaction.

Technical glitches also exhibit a significant negative impact, with a standardized coefficient of -0.245, aligning with previous research that emphasizes the importance of technological reliability in enhancing customer trust (Mooi & Sarstedt, 2011). Regulatory compliance issues, although exhibiting the smallest effect size at -0.145, still contribute to a decrease in customer satisfaction, suggesting that administrative challenges can detract from the overall customer experience.

Overall these findings are consistent with studies by Vorosmarty and Dobos (2020), which highlight how service disruptions erode customer satisfaction. The negative correlations observed in this research reinforce the notion that customers are particularly sensitive to service quality, especially during disruptions.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter gives an outline of key discoveries of the study displayed in objectives of the study. Conclusions were drawn from the findings and recommendations are given to help improve the customer service delivered by Bank of Abyssinia.

5.1 Summary of Major Findings

This research study was investigates the impact of system disruptions on customer satisfaction at the Bank of Abyssinia (BOA). The study explores how system disruptions like technique glitch, utility failure, regulatory compliance issues and natural disasters affects customer satisfaction within the bank.

- Bank of Abyssinia's customer base is predominantly male, with the majority being in the 25-40 age and single. Most customer visit the bank frequently, with over 61.8% doing so on a daily basis. Over half the respondents have been customers of the bank for 1-5 years, indicating a relatively stable customer base.
- The regression model analysis revealed that the four independent variables - technical glitches, utility failures, regulatory compliance issues, and natural disasters/adverse weather conditions - collectively explain 28.3% of the variance in customer satisfaction at the Bank of Abyssinia. This suggests these factors account for a substantial portion of the fluctuations in customer satisfaction, though there are likely additional variables not captured in the model that contribute to the remaining 71.7% of the variance.
- Examining the relative impact of each factor, the analysis showed utility failures have the strongest negative effect on customer satisfaction. A one-unit increase in the occurrence of utility failures is associated with a 0.415-unit decrease in customer satisfaction, holding all other variables constant.
- Technical glitches also have a significant detrimental impact, with a standardized coefficient of -0.245, indicating a one-standard-deviation increase in technical issues is linked to a 0.245-standard-deviation drop in satisfaction.

- Natural disasters and adverse weather conditions were found to have a sizable negative influence as well, with a standardized coefficient of -0.265. This implies a one-standard-deviation increase in the severity or frequency of these events corresponds to a 0.265-standard-deviation decline in customer satisfaction.
- While regulatory compliance issues exhibited the smallest negative effect among the factors examined, the standardized coefficient of -0.045 still suggests this variable has a statistically significant inverse relationship with customer satisfaction. Increases in regulatory problems are associated with meaningful, albeit relatively lesser, decreases in how customers perceive the organization's service during disruptions.
- In summary, the hypothesis testing confirmed all four independent variables have a significant negative impact on customer satisfaction at the Bank of Abyssinia.

- The qualitative analysis revealed that BOA has implemented a comprehensive set of strategies and measures strategic initiatives to maintain customer satisfaction during disruptions. Bank of Abyssinia enhances customer satisfaction through proactive communication, alternative solutions, and staff training to address disruptions. It employs a multi-channel strategy for timely updates and implements robust data security measures. The bank also fosters interdepartmental collaboration and adheres to regulatory standards to ensure effective disruption management.

5.2 Conclusions

This research study has effectively examined the impact of system disruptions on customer satisfaction at the Bank of Abyssinia (BoA), addressing key objectives and research questions. The findings reveal that technical glitches, utility failures, regulatory compliance issues, and natural disasters significantly hinder customer satisfaction, highlighting the critical importance of operational reliability in the banking sector. Utility failures emerged as the most detrimental factor, with a standardized coefficient of -0.415, indicating that even minor disruptions can lead to substantial declines in customer satisfaction. Technical glitches and natural disasters also demonstrated significant negative impacts, with coefficients of -0.245 and -0.265, respectively. While regulatory compliance issues had the smallest effect size at -0.045, they still contribute meaningfully to overall customer dissatisfaction.

These insights underscore the sensitivity of customers to service quality, particularly during disruptions, affirming the necessity for banks to prioritize the reliability of their services. The qualitative analysis further revealed that BoA has implemented proactive strategies, such as effective communication, alternative solutions, and staff training, to mitigate the impacts of disruptions on customer satisfaction. This proactive approach not only helps maintain customer trust during challenging times but also serves as a valuable model for other financial institutions aiming to enhance service quality. Overall, the study emphasizes that continuous improvement in operational practices is essential for banks to build resilience against disruptions, thereby fostering greater customer satisfaction and loyalty in an increasingly competitive environment.

5.3 Recommendations

Based on the findings and conclusions of the study, the following recommendations are proposed to enhance customer satisfaction in light of system disruptions:

- **Enhance Infrastructure Reliability**:
  - Invest in upgrading technological infrastructure to minimize technical glitches. Regular maintenance and updates of systems can ensure smoother operations and reduce the likelihood of disruptions.
- **Develop Comprehensive Contingency Plans**:
  - Create detailed contingency plans to address various types of disruptions, including utility failures and natural disasters. These plans should outline clear protocols for staff and communication strategies with customers.
- **Implement Proactive Communication Strategies**:
  - Establish a robust communication framework that keeps customers informed during disruptions. Timely updates via multiple channels (e.g., SMS, email, social media) can help manage customer expectations and maintain trust.
- **Train Staff on Disruption Management**:
  - Invest in training programs for staff focused on effective customer service during crises. Empowering employees with the skills to handle disruptions can enhance customer interactions and satisfaction.

- **Monitor Customer Feedback**:
    - Regularly collect and analyze customer feedback to identify pain points and areas for improvement. Implementing changes based on customer insights can enhance service quality and customer loyalty.
- **Strengthen Regulatory Compliance Processes**:
    - Streamline regulatory compliance processes to minimize administrative challenges. Simplifying these procedures can help reduce their negative impact on customer satisfaction.
- **Foster Interdepartmental Collaboration**:
    - Encourage collaboration between different departments to ensure a unified response to disruptions. This can enhance the bank's ability to manage crises effectively and provide a seamless customer experience.
- **Explore Technological Solutions**:
    - Investigate the use of advanced technologies, such as predictive analytics and AI, to anticipate potential disruptions and respond proactively. Implementing such solutions can help mitigate risks before they impact customers.

By implementing these recommendations, the Bank can strengthen its operational resilience, improve customer satisfaction, and foster long-term loyalty in an increasingly competitive banking environment.

5.4 Areas for Further Study

Here are some potential areas for further study

- **Customer Segmentation and Differentiated Strategies:**
    - Analyze the impact of system disruptions on different customer segments (e.g. high-net-worth individuals, small businesses, retail customers).
- **Comparative Studies Among Financial Institutions**
    - Investigate and compare the impact of system failures on customer satisfaction across different financial institutions to identify best practices and strategies that lead to improved customer experiences.
- **Employee Preparedness and Resilience:**
    - Investigate the potential impacts of interruptions on employee morale, productivity, job satisfaction and strategies to mitigate these effects.

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Appendix-I

Addis Ababa University College of Business and Economics

Office of Graduate Studies

Marketing Management Program

Questionnaires to be filled by Customers

Dear Respondent,

I am currently a student of Addis Ababa University, and I am doing my MA thesis. On the effects of system disruption on service quality in the case of Bank of Abyssinia.

The purpose of this questionnaire is to gather data regarding the system disruption and service quality in the case of Bank of Abyssinia. The study is purely for academic purpose and thus does not affect you in any case. All of your response to the given question will be used for the research and will be kept confidential.

Your frank and timely response is vital for the success of the study. Therefore, I kindly request you to respond to each question carefully.

Thank you in advance for your cooperation and timely response!

SECTION I: PERSONAL INFORMATION

Instructions: Please select the appropriate option for each question.

1. What is your gender?

   A. Male

   B. Female

2. Kindly indicate your age group:

   A. Less than 25 years

   B. 25-40 years

   C. Greater than 40 years

3. What is your marital status?

   A. Single

   B. Married

4. How often do you visit the bank?

   A. Daily

   B. Weekly

   C. Monthly

   D. other

5. How long have you been a customer of the bank?

   A. 0-1 year

   B. 1-5 years

   C. above 5 years

Section 2

Please read each statement and indicate your level of agreement or disagreement by marking an 'X' in the corresponding box. Scale: Strongly Disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, Strongly Agree = 5

		SD(1)	D(2)	N(3)	A(4)	SA(5)
	System Disruption					
	Technical Glitches					
1	Technical problems with the bank's digital services significantly interfere with my transactions					
2	**Outages in digital banking make it hard to manage my finances.**					
3	I feel very frustrated when delays or failures in digital transactions occur due to the bank's technical issues.					
4	The bank communicates proactively about technical issues and provides updates on their resolution.					
	Utility Failures					
5	Utility disruptions have impacted the availability of the bank's services.					
6	Utility failures have prevented me from accessing my accounts or completing important transactions					
7	It made difficulty for me to manage my finances in a timely manner.					
8	The bank provided good support and alternatives when there were physical facility issues.					
9	The bank communicates about utility-related service disruptions and provides updates on restoration.					
	Regulatory Compliance Issues					
10	Changes in banking regulations make it difficult for me					

	to complete my regular transactions.					
11	I struggle to adapt to new banking procedures and requirements resulting from regulatory changes.					
12	Updating my account information and settings due to regulatory changes was time-consuming.					
13	The bank's communication about regulatory changes and their impact is clear and helpful.					
	Natural Disasters and Adverse Weather Conditions					
14	Natural disasters or adverse weather have disrupted the bank's ability to provide services.					
15	Natural events have prevented me from accessing my accounts or completing transactions.					
16	It is difficult for me to manage my finances when disruptions are caused by natural disasters or adverse weather.					
17	The bank communicates proactively about natural disaster or weather-related service disruptions and restoration.					
	Customer Satisfaction					
18	The bank consistently meets my expectations for a positive banking experience.					
19	I would recommend this bank to friends, family, or colleagues.					
20	The bank's overall customer service has been excellent.					
21	I am generally satisfied with the value I receive from this bank.					

Appendix-II: Interview Questions for Management Employees of Bank of Abyssinia

1. What strategies or initiatives has the bank implemented to improve customer satisfaction in the face of system disruptions?
2. How does the bank communicate with customers during system disruptions? What channels are used?
3. What steps do you take to ensure that customer data and transactions are secure and protected even during a system disruption?
4. Can you discuss any specific technology solutions or tools you have utilized to maintain service during system disruptions?
5. How do you collaborate with different departments or teams within the Bank of Abyssinia to ensure a coordinated response in mitigating the effects?
6. Can you explain any specific regulatory requirements or industry standards that you consider when developing strategies to mitigate system disruptions in BOA?