The Impact of Service Quality on Customer Satisfaction in the Case of Ethiopian Commodity Exchange (ECX) Concerning the Coffee Market

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DECLARATION

I, Kalkidan Alemayehu, bearing the ID number GSE/1885/15, hereby declare that the thesis entitled *"The Impact of Service Quality on Customer satisfaction in the case of Ethiopian Commodity Exchange (ECX) concerning the coffee Market"* is my original work and has not been submitted to any other university or institution for the award of any degree or diploma.

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Certefication

This is to certify that the thesis entitled "The Impact of Service Quality on Customer satisfaction in the case of Ethiopian Commodity Exchange (ECX) concerning the coffee market" submitted to School of Graduate Studies of Addis Ababa University, College of Business and Economics has been carried out under my supervision. I certify that this thesis is her original work and is suitable for submission for partial fulfillment of the requirement for the award of master's in business administration.

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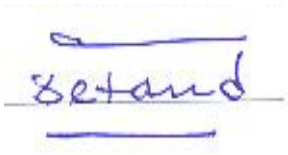
Dr. Getie Andualem		**18/6/2025**
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Acronyms

CUSA = Customer satisfaction

TAN = Tangibility

REL = Reliability

RESP= Responsiveness

ASSU = Assurance

EMPA= Empathy

ECX = Ethiopian Commodity Exchange

Abstract

This study investigates the impact of service quality on customer satisfaction within the Ethiopian Commodity Exchange (ECX), specifically focusing on the coffee market. Using the SERVPERF model, five key service quality dimensions tangibility, reliability, responsiveness, assurance, and empathy were analyzed to determine their influence on customer satisfaction. A quantitative research approach was employed, utilizing structured questionnaires distributed to a randomly selected sample of 322 coffee traders, of which 274 responses were valid for analysis. Descriptive and inferential statistical techniques, including correlation and multiple regression analysis using SPSS v25, were applied to assess the relationships among the variables. The findings revealed that tangibility ($\beta = 0.521$, $p < 0.001$), reliability ($\beta = 0.174$, $p = 0.002$), responsiveness ($\beta = 0.165$, $p = 0.012$), and empathy ($\beta = 0.167$, $p = 0.001$) had statistically significant and positive effects on customer satisfaction. In contrast, assurance ($\beta = 0.023$, $p = 0.720$) did not show a significant impact. The model explained 68.0% of the variation in customer satisfaction (Adjusted $R^2 = 0.680$). The study concludes that performance-based service delivery is a strong predictor of customer satisfaction in commodity trading platforms like ECX. It recommends that ECX prioritize improvements in responsiveness, personalization, and physical service attributes while addressing gaps in employee competence and trust-building. These insights offer valuable guidance for ECX management, policymakers, and stakeholders seeking to enhance service quality and customer experience in Ethiopia's agricultural markets.

Keywords: Ethiopian Commodity Exchange (ECX), Service Quality, SERVPERF Model, and Customer Satisfaction.

Chapter One

Introduction

Within this chapter the study provides an overview of key concepts related to commodity exchanges, with a specific focus on the Ethiopian Commodity Exchange (ECX) and its connection to the Ethiopian coffee industry. It covers the study's background and context, outlines the problem statement, and presents the research questions and hypotheses. Additionally, the chapter discusses the study's objectives, significance, scope, and limitations, as well as ethical considerations and the structure of the overall study.

1.1 Background of the Study

Ethiopian Commodity Exchange

Back in 2008, The Ethiopian Commodity Exchange (ECX) was Established by Proclamation 550/2007 as a wholly state-owned market institution, It's set up to have official members who represent the trading community. These memberships are for keeps and can even be sold or transferred to someone else. including non-member direct traders that access the trading platform for their purpose. To modernize Ethiopia’s agricultural market by providing a secure, efficient, and transparent trading system. Before ECX, commodity trading in Ethiopia was largely informal, with limited price transparency, weak enforcement of contracts, and high transaction risks for buyers and sellers. ECX introduced a centralized trading platform, standardized grading and warehousing systems, real-time market information, and an efficient clearing and settlement process. These improvements aimed to enhance market efficiency, increase farmers’ bargaining power, and attract more investors. Studies highlight that ECX has contributed to price stability and reduced transaction costs, but challenges remain, particularly in ensuring smallholder farmers fully benefit from the system (Gabre-Madhin, 2012; Alemu & Ogutu, 2020).

Despite its successes, ECX has faced criticisms regarding its rigid trading system, limited flexibility for direct transactions, and concerns over grading accuracy. Researchers argue that alternative trading options, such as direct specialty coffee sales and digital platforms, are increasingly influencing traders' decisions (Minten et al., 2014).

The Ethiopian Commodity Exchange (ECX) plays a critical role in Ethiopia's coffee sector by providing a structured marketplace that enhances price transparency, market efficiency, and quality assurance. Before ECX's establishment in 2008, the coffee trade in Ethiopia was fragmented, with inconsistent pricing and weak market linkages. ECX introduced standardized grading, warehousing, and a centralized trading system, which helped improve traceability and reduce transaction risks (Gabre-Madhin, 2012). However, researchers argue that ECX's rigid structure limits direct relationships between coffee producers and international buyers, restricting specialty coffee sales (Minten et al., 2014). In response, alternative trading channels, such as direct exports and digital platforms, have emerged, influencing traders' preferences. Understanding how ECX's operations impact coffee traders' decisions is crucial, particularly as the sector navigates between regulated exchange trading and more flexible alternative markets.

Since The Ethiopian Commodity Exchange (ECX) helps to enhance the efficiency, transparency, and reliability of coffee trading. However, the effectiveness of ECX's service quality in meeting customer expectations remains a critical area of research, especially regarding its impact on customer satisfaction.

Service Quality and Customer Satisfaction

Service quality is a fundamental determinant of customer satisfaction in service industries, including commodity exchanges. Several models have been developed to assess service quality. Most often used models are the SERVPERF (Cronin & Taylor, 1992) and SERQUAL (Parasuraman, Zeithaml, & Berry, 1988). While SERVQUAL evaluates service quality based on expectations and perceptions, SERVPERF focuses only on actual service performance, making it more efficient for measuring service quality in operational settings like ECX. Ladhari (2009) reviewed service quality models and found that perceived service performance strongly influences customer satisfaction. In commodity and financial exchanges, studies by Okechuku & Chinedum (2019) suggest that efficient service delivery, timely information, and smooth transactions significantly impact customer satisfaction. Particularly in structured trading environments.

In Ethiopia, Ayele & Tiruneh (2021) examined the impact of ECX services on coffee traders and found that service reliability, market information, and settlement processes significantly influence satisfaction and trading decisions.

Since all the above-mentioned research has shown a link between service quality customer satisfaction and loyalty in commodity trading, limited research has focused on ECX's service quality using SERVPERF, particularly in the coffee market. Most studies in Ethiopia emphasize ECX's role in price stabilization and market efficiency (Gabre-Madhin, 2012), but fewer studies investigate its service quality and customer satisfaction. This study addresses this gap by assessing ECX's service quality using SERVPERF in the coffee market context.

1.2 Statement of the Problem

Service quality is a critical factor influencing customer satisfaction in commodity exchanges, yet its impact within the Ethiopian Commodity Exchange (ECX) remains underexplored. Existing studies indicate that service quality significantly affects customer satisfaction. The SERVPERF model, which focuses on perceived service performance, has been widely used to asses' service quality in financial and trading institutions (Cronin & Taylor, 1992). (Phung, Gerard Fitzgerald (2016) researchers were looking into how good the patient care was at two public hospitals over in Vietnam's Khanh Hoa Province. To do this, they used a specific tool called the SERVPERF scale. What's interesting is that they didn't just use the standard model; they actually tweaked the common SERVQUAL framework by adding an extra piece to it, essentially creating a sixth aspect to consider when measuring service quality.

Prior studies suggest that reliable market information and efficient clearing and settlement processes are essential for building customer trust in commodity markets (Gabre-Madhin, 2012). Moreover, grading and standardization practices play a crucial role in ensuring product quality and price transparency, which directly influence customers satisfaction (Minten et al., 2018). Despite these findings, gaps remain in understanding how these ECX-specific service dimensions SERVPERF components, contribute to customer satisfaction.

Loads of researchers have been trying to figure out what makes customers happy with the service they get, and they've studied this in all sorts of different businesses. For example, Nga Phan Thi Hang and Nguyen Kim Quoc Trung, in a recent 2024 study focusing on small and medium-sized businesses in Vietnam, actually suggested that future research might be better off using the SERVPERF model instead of the SERVQUAL one to get a clearer picture.

This research looks specifically at the Ethiopian Commodity Exchange (ECX) to understand how the quality of its services impacts whether customers stay satisfied. To get to the bottom of this, the researcher used SERVPERF model (a tool for measuring service quality) and tweaking it to include aspects that are unique to how ECX actually operates. This should give us a much clearer, more complete picture of how ECX's day to day business affects its ability to keep customers satisfied. When the researcher gets results, they won't just be interesting facts. The aim is to give the people in charge both policymakers and the managers at ECX some really useful, practical ideas. They can then use these insights to make the services at ECX even better, ensure their customers are more satisfied, and ultimately, help build stronger, more lasting relationships with everyone involved in Ethiopia's bustling commodity market.

1.3 Research Questions

1. What is the impact of tangibles on Customer Satisfaction?

2. What is the impact of reliability on Customer Satisfaction?

3. What is the impact of responsiveness on Customer Satisfaction?

4. What is the impact of assurance on Customers Satisfaction?

5. What is the impact of empathy on Customer Satisfaction?

1.4 Objective of the study

1.4.1 General objective

The general objective of this study is to identify the impact of service quality on customer satisfaction in the case of Ethiopian Commodity Exchange (ECX).

1.4.2 Specific objectives

Specifically, the study aims:

- To examine the impact of tangibles on customer satisfaction.
- To examine the impact of reliability on customer satisfaction.
- To examine the impact of responsiveness on customer satisfaction.
- To examine the impact of assurance on customer satisfaction.
- To examine the impact of empathy on customer satisfaction.

1.5 Scope of the Study

The study focuses on customers and traders engaged with the Ethiopian Commodity Exchange (ECX). It examines how service quality dimensions tangibility, reliability, responsiveness, assurance and empathy affect customer satisfaction.

The study employs a structured survey, targeting active ECX customers, including farmers, traders, and exporters. The geographical scope is to Addis Ababa where the ECX major trading floors are situated. While the findings were specific to ECX, they may also offer insights applicable to other emerging commodity exchanges in developing economies.

1.6 Significance of the Study

This study is significant for multiple stakeholders, including ECX management, traders, policymakers, and researchers. By using SERVPERF model, this research provides a more tailored and accurate assessment of service quality in Ethiopia's commodity market.

To ECX Management the findings highlighted on the exact parts of their service that really matter when it comes to making traders happy. This helps ECX refine its operations, enhance service delivery, and implement targeted improvements to retain and attract traders.

To Traders and Customers, Improved service quality led to more reliable market information, efficient transactions, and standardized product grading, ultimately increasing trust and market efficiency.

To Policymakers, the study provided data driven insights to support regulatory and policy decisions aimed at strengthening Ethiopia's commodity exchange system.

To Researchers this study fills a literature gap by using the SERVPERF model offering a framework for future research on service quality in commodity exchanges.

1.7 Limitations of the Study

The major limitations of undertaking research in this context is the lack of sufficient secondary resources to measure the research problem because there hasn't been much research done using this particular method when looking at commodity exchanges in Ethiopia. From the research methodology's perspective, the research was limited to using explanatory descriptive and hypothesis testing research methods as they were deemed to be best to describe and explore the research. And geographical location is restricted in Addis Ababa This can limit the scope of data collection and may lead to under representation of certain regions or groups. Availability and reliability of secondary data and access to key stakeholders for primary data collection may pose challenges.

Acknowledging these limitations also helps in setting realistic expectations for the outcomes of the research. Findings may be context-specific to the Ethiopian context and may not be fully generalizable to other commodity exchanges or regions.

1.8 Definition of key terms used in the study

Commodity Exchange – is a structured marketplace where buyers and sellers trade standardized contracts for commodities, ensuring price discovery and liquidity (Gabre-Madhin, 2012). These exchanges enhance market efficiency by reducing transaction costs and providing risk management tools (UNCTAD, 2009).

Ethiopian Commodity Exchange (ECX) – The ECX is a centralized trading platform established in 2008 to modernize Ethiopia's agricultural markets by improving price transparency, efficiency, and reliability (Gabre-Madhin, 2012). It integrates trading, warehousing, and market information services to support smallholder farmers and traders (Meijerink et al., 2014).

SERVPERF Model – Cronin and his colleague Taylor came up with this idea back in 1992. Instead of just asking what people expected from a service, SERVPERF looks at how good the service actually was when they experienced it. It usually breaks this down into five main parts, as Jain & Gupta (2004) pointed out:

Tangibles (This is all the physical stuff, how the place looks, the equipment they use, and even how the staff are presented),

Reliability (can they actually do what they promised, and do it right every time?),

Responsiveness (How quick are they to help, and do they seem genuinely willing to assist customers?),

Assurance (This is about whether the employees know their stuff, is polite, and makes you feel confident you can trust them.), and

Empathy (This is that personal touch do they seem to care and give you individual attention?).

Customer Satisfaction – this is about how well a service lives up to or maybe even beats what a customer was hoping for, as Oliver (1980) described. If people are satisfied, they're more likely to come back and keep doing business. It's a really big deal for any company trying to stay ahead, especially if their main thing is providing a service (Zeithaml et al., 1996).

1.9 Organization of the Study

The study was structured into five chapters. Chapter one covers the background of the study, problem statement, research objectives, research questions, significance, and scope of the study. Chapter Two presented a review of the relevant literature. Chapter Three outlines the research methodology. Chapter Four focused on data analysis and findings. Finally, Chapter Five summarizes the key issues discussed in the study, conclusion recommendation and future research directions.

Chapter Two
Literature Review

2.1 Theoretical Literature Review

Service Quality

Services, by their inherent nature, are experiential and intangible processes rather than tangible objects (Grönroos, 2007; Vargo & Lusch, 2004). This intangibility makes the assessment of service quality a complex, subjective undertaking for the consumer. Early seminal work defined service quality as the extent of discrepancy between customers' expectations (what they feel a service provider should offer) and their perceptions of the actual service performance (Parasuraman, Zeithaml, & Berry, 1985). This “gap model" highlights that quality is not an absolute but is judged relative to a pre-existing standard in the customer's mind.

These expectations are shaped by a confluence of factors, including past experiences, word of mouth communication, marketing messages, and individual needs (Zeithaml, Berry, & Parasuraman, 1993). The perceived quality of a service encounter is often multidimensional. While various frameworks exist, the dimensions proposed by Parasuraman et al. (1988) Reliability (dependable and accurate performance), Responsiveness (willingness to help and promptness), Assurance (employee knowledge, courtesy, and ability to inspire trust), Empathy (caring, individualized attention), and Tangibles (physical appearance of facilities, equipment, personnel) remain highly influential in understanding the facets customers evaluate. Critiques of this model led to alternative conceptualizations, such as performance-only measures (e.g., SERVPERF by Cronin & Taylor, 1992), yet the core notion that customers assess service based on performance across key attributes persists. Fundamentally, service quality is often viewed as a cognitive judgment or an attitude relating to the superiority or excellence of the service (Rust & Oliver, 1994).

Customer Satisfaction

While service quality is a cognitive evaluation of service attributes, customer satisfaction is generally conceptualized as a broader, more affective post consumption response (Oliver, 1997).

It represents a customer's feeling of pleasure or disappointment resulting from comparing a product's or service's perceived performance (or outcome) in relation to their expectations (Kotler & Keller, 2016). If performance falls short of expectations, the customer is dissatisfied; if it matches, they are satisfied; if it exceeds, they are highly satisfied or delighted (Oliver, Rust, & Varki, 1997).

Service quality dimensions are widely recognized as significant antecedents to customer satisfaction (Cronin & Taylor, 1992; Spreng, MacKenzie, & Olshavsky, 1996). For instance, the reliability of service delivery, the responsiveness of staff to inquiries, the assurance provided by competent employees, the empathy shown in interactions, and even the tangibles associated with the service environment all contribute to the overall satisfaction judgment. Due to the interactive and co-produced nature of many services (Bitner, Booms, & Tetreault, 1990), the interpersonal aspects (responsiveness, assurance, empathy) can often weigh more heavily in shaping satisfaction than the purely physical elements.

Service Quality and Customer Satisfaction in a Commodity Exchange

Studies have examined service quality in commodity exchanges, highlighting factors such as trading platform efficiency, warehouse management, grading and standardization, market information access, regulation compliance, and customer service (Alemu & Tilahun, 2021). In commodity exchanges, satisfaction is influenced by the efficiency of transactions, access to market information, warehouse operations, and grading standards (Zeithaml, Berry, & Parasuraman, 1996). Studies have found that customer satisfaction in commodity exchanges is a key factor affecting trading volume and market participation (Gebremedhin & Teshome, 2020).

2.2 Empirical Literature Review

2.2.1 Service Quality and Customer Satisfaction

Empirically, numerous studies across diverse industries have demonstrated that higher levels of perceived service quality lead to increased customer satisfaction (Cronin & Taylor, 1992; Anderson, Fornell, & Lehmann, 1994). For instance, Cronin and Taylor's (1992) influential work found that service quality was a significant antecedent of customer satisfaction. Similarly,

Anderson and Sullivan (1993) empirically showed that perceptions of quality have a direct, positive impact on satisfaction. This general finding suggests that when customers perceive a service to be of high quality across its various facets, their overall feeling of contentment with the service experience is enhanced (Spreng, MacKenzie, & Olshavsky, 1996; Caruana, 2002). The logic is that meeting or exceeding expectations on key service attributes (i.e., delivering quality) fulfills customer needs and desires, leading to a positive evaluative state (satisfaction).

Recent empirical studies employing the SERVPERF model have provided valuable insights into the relationship between service quality and customer satisfaction. Rahman et al. (2020) applied the SERVPERF model to examine retail service quality in Malaysia. Their findings revealed that tangibility and responsiveness were the most influential dimensions in shaping customers' perceptions of service performance. The study concluded that high-quality physical facilities and prompt service delivery significantly enhance customer satisfaction. In a similar context, Abdulahi et al. (2023) used SERVPERF to assess logistics services in East Africa and found that poor responsiveness and a lack of empathy negatively affected service perceptions. The research emphasized that improving employee attitudes and communication is vital for service quality enhancement.

In Ethiopia, Kebede (2021) adopted the SERVPERF model to evaluate the service performance of the Ethiopian Commodity Exchange (ECX) from the perspective of coffee traders. The study identified weaknesses in grading accuracy, market information delivery, and transaction processing, which led to reduced customer satisfaction. The results emphasized the importance of performance-based service improvements in institutional settings. Likewise, Bekele and Endale (2020) investigated public service delivery in Ethiopia using a SERVPERF approach and found that inconsistency across service dimensions particularly in reliability and assurance was a major cause of dissatisfaction among users. The study recommended strengthening operational efficiency and maintaining uniform service delivery standards.

Furthermore, Asmamaw and Hailu (2023) applied the SERVPERF framework in their study of coffee cooperatives and identified that responsiveness and assurance had a strong positive effect on member satisfaction. Their research suggested that performance-related aspects of service

delivery such as timely communication and confidence in service providers are essential for sustaining trust in cooperative systems. Nguyen et al. (2022), analyzing e-commerce services in Vietnam, also used the SERVPERF model and reported that speed of delivery and service reliability were primary drivers of satisfaction. Their findings highlighted the need for consistent, high-performing service attributes in online platforms to maintain customer loyalty.

2.2.1.1 Tangibles and Satisfaction

Empirical studies consistently affirm that the physical evidence accompanying a service, such as the condition of facilities, modern's of equipment, and the professional appearance of staff, positively influences customer satisfaction levels (e.g., Bitner, 1992; Wakefield & Blodgett, 1996). While sometimes considered a peripheral factor, tangible cues often shape initial perceptions and contribute to a sense of comfort and professionalism, thereby impacting the overall contentment with the service experience, particularly in high-contact service environments (Reimer & Kuehn, 2005).

Modern-looking equipment

Studies over the past decade consistently show that the use of modern and advanced equipment enhances perceived service quality. For instance, Parasuraman et al. (2010) and Nguyen et al. (2022) found that in both financial and e-commerce sectors, customers associate up-to-date tools and technology with efficiency and professionalism, which increases trust and satisfaction.

Visually appealing physical facilities

Research from Rahman et al. (2020) and Zeithaml et al. (2013) emphasized that the physical environment, including layout, cleanliness, and interior design, significantly influences customer evaluations of service quality. Particularly in retail and hospitality, the appeal of facilities strongly impacts initial perceptions and repeat visits.

Neat and professional appearance of staff

A study by Ladhari (2012) in the hotel sector and Abdulahi et al. (2023) in logistics confirmed that well-dressed and presentable staff create a professional image that reinforces confidence in

the service provider. This tangibility factor is especially important in face-to-face service environments.

Visually appealing materials (documents, signage)

Research by Teshome and Tegegne (2022) and Clemes et al. (2010) indicated that attractive, well-organized service materials such as receipts, brochures, or signage play a crucial role in reinforcing professionalism, especially in banking and public service contexts.

2.2.1.2 Reliability as a Cornerstone of Satisfaction

The capacity of a service provider to deliver on its promises accurately and dependably—the essence of reliability is overwhelmingly supported in empirical literature as a paramount driver of customer contentment (Parasuraman, Zeithaml & Berry, 1991; Cronin & Taylor, 1992). Numerous sector-specific studies demonstrate that when services are performed correctly the first time and promises are kept, satisfaction scores significantly increase, as reliability forms the fundamental expectation of any service exchange (Caruana, 2002).

Performing promised services dependably and accurately

Between 2010 and 2024, several studies (e.g., Seth et al., 2011; Bekele & Endale, 2020) found that reliability remains a cornerstone of service quality. Inaccuracies in service performance significantly reduce trust and long-term satisfaction, especially in sectors like public administration and finance.

Service is dependable

In commodity markets, Kebede (2021) showed that dependable service, such as consistent grading and transaction processing, greatly influenced user confidence. Earlier research by Grönroos (2011) similarly emphasized that dependable delivery builds a foundation for sustained customer relationships.

Providing services at promised time

Numerous studies, such as Asmamaw & Hailu (2023) and Wang et al. (2013), indicate that timeliness is essential across sectors. When services are delivered as scheduled, customers feel respected and are more likely to return.

Maintaining error-free records

Research by Nguyen et al. (2022) and Sharma et al. (2012) highlighted that documentation accuracy is critical, especially in digital and financial services. Errors in billing, delivery, or personal records cause dissatisfaction and complaints.

Providing services right the first time

"First-time-right" service was shown by Ladhari (2012) and Abdulahi et al. (2023) to be a key factor in minimizing customer frustration. Rework and repeated corrections lower service confidence, especially in high-contact environments.

2.2.1.3 Responsiveness and its Impact on Customer Perceptions

The alacrity and willingness of service personnel to assist customers and provide prompt attention responsiveness has been empirically demonstrated to significantly enhance satisfaction, especially during service encounters requiring interaction or problem resolution (Zeithaml, Berry & Parasuraman, 1996; Boshoff & Leong, 1998). Research findings indicate that customers value timely service and clear communication, perceiving providers who are quick to address needs and inquiries as more customer-centric, leading to higher satisfaction ratings (Sureshchandar, Rajendran, & Anantharaman, 2002).

Informing customers when service will be performed

Ahmed and Dagne (2021) and Meesala & Paul (2018) demonstrated that keeping customers informed reduces uncertainty and improves service transparency. Especially in telecom and healthcare, lack of communication about delays negatively impacts satisfaction.

Prompt service to customers

Timeliness in responding to inquiries or resolving issues has been widely studied. Rahman et al. (2020) and Parasuraman et al. (2010) found that quick response times significantly influence customer loyalty in both physical and online environments.

Willingness to help customers

According to Asmamaw and Hailu (2023) and Kang & James (2004), employees' readiness to assist is a strong predictor of satisfaction. This trait enhances emotional connection and the perception of personalized care.

Never too busy to respond to customer requests

Nguyen et al. (2022) and Clemes et al. (2013) reported that availability and attentiveness of employees directly affect perceptions of responsiveness. Ignoring or delaying responses signals neglect, which erodes trust and satisfaction.

2.2.1.4 Assurance Fostering Customer Confidence and Satisfaction

Empirical findings underscore the importance of employee competence, politeness, and the ability to instill confidence dimensions of assurance as significant contributors to positive satisfaction outcomes (Berry & Parasuraman, 1991; Keaveney, 1995). When customers perceive service staff as knowledgeable, courteous, and trustworthy, their perceived risk diminishes, and their confidence in the provider's capabilities grows, translating directly into heightened levels of satisfaction with the service interaction (Crosby, Evans, & Cowles, 1990).

Employees instill confidence in customers

Studies like Teshome & Tegegne (2022) and Ladhari (2012) revealed that employee expertise and demeanor instill trust. Confident, knowledgeable staff are essential in sectors requiring high involvement, such as banking and healthcare.

Customers feel safe in transactions

Security and transaction transparency were consistently emphasized in studies like Kebede (2021) and Wu & Ko (2013). In contexts like commodity exchanges and online shopping, perceived safety directly correlates with customer retention.

Employees are consistently courteous

Courtesy was shown by Abdulahi et al. (2023) and Seth et al. (2011) to be a key factor in perceived service quality. Polite and respectful interactions often compensate for minor service lapses.

Employees have knowledge to answer questions

Research by Bekele & Endale (2020) and Meesala & Paul (2018) confirmed that technical knowledge and communication clarity from frontline staff are vital to avoid confusion and complaints, especially in complex or regulated service environments

2.2.1.5 Empathy: The Human Touch in Satisfaction Formation

The provision of individualized and caring attention by service employee's empathy is empirically validated as a key factor in fostering customer satisfaction, making customers feel uniquely valued and understood (Schneider & Bowen, 1993; Hartline & Ferrell, 1996). Studies across various service contexts reveal that when employees demonstrate genuine concern and adapt their approach to individual customer needs; it creates a stronger emotional connection and a more positive evaluative judgment of the service, thereby enhancing satisfaction (Gremler & Gwinner, 2000).

Employees give individual attention

Nguyen et al. (2022) and Kang & James (2004) showed that tailored attention enhances satisfaction in competitive sectors like e-commerce and retail. Personalized service creates a sense of value and belonging.

Employees deal with customers in a caring manner

Asmamaw and Hailu (2023) emphasized that care and concern shown by cooperative employees toward farmers greatly improved satisfaction. Similar findings were reported in patient care studies (Ladhari, 2012).

Employees understand specific needs of customers

Teshome & Tegegne (2022) and Grönroos (2011) argued that understanding unique needs leads to relevant, effective service delivery. This alignment between customer expectations and service design is crucial in B2B and rural contexts.

Organization has customers' best interests at heart

Ahmed and Dagne (2021) found that when telecom companies proactively address customer pain points or protect user data, satisfaction and loyalty rise. This perception of advocacy builds long-term relationships.

Operating hours are convenient to customers

Flexible service hours have been shown by Abdulahi et al. (2023) and Parasuraman et al. (2010) to significantly impact access and convenience. Especially in logistics and rural banking, extended hours improve customer inclusion.

2.3 Theoretical framework of the study

To really dig into these connections within the specific context of the Ethiopian Commodity Exchange (ECX), this study needs a solid theoretical blueprint. We're leaning on the SERVPERF model to help explain the interaction between service qualities, how satisfied customers feel.

1. SERVPERF Model (Cronin and Taylor, 1992)

The SERVPERF model, developed by Cronin & Taylor back in 1992, is a well-regarded framework in the world of service quality. What makes it distinct is its direct approach: instead of focusing on the gap between what customers expect and what they perceive (which is what the SERVQUAL model does), SERVPERF zeroes in on the actual performance of the service. It

essentially asks, "How good was the service, really?" based on the customer's experience. This evaluation typically happens across five key dimensions:

- **Tangibility** – This is about the physical side of things what customers can see and touch. For the ECX, this would include their physical facilities, the equipment they use, and even the appearance of their staff.
- **Reliability** – can the ECX perform its services accurately and dependably, time after time?
- **Responsiveness** – This dimension looks at how willing and prompt the ECX team is when it comes to helping customers and providing timely service.
- **Assurance** – It's all about the knowledge and courtesy of the employees and, crucially, their ability to inspire trust and confidence in customers.
- **Empathy** – This captures that vital human element providing individualized attention and understanding to each customer.

It's the collective impact of these dimensions the SERVPERF that shapes how customers perceive the service quality. These perceptions, in turn, are expected to directly influence their levels of satisfaction.

2.4 Conceptual framework

After diving deep into what other researchers have found and getting a good grasp of the existing theories, the researcher sketched out the conceptual framework that will guide this particular study. Think of this framework as our roadmap. It's designed to give us a clear, structured way to explore how the quality at Ethiopian Commodity Exchange (ECX) ultimately impacts customer satisfaction.

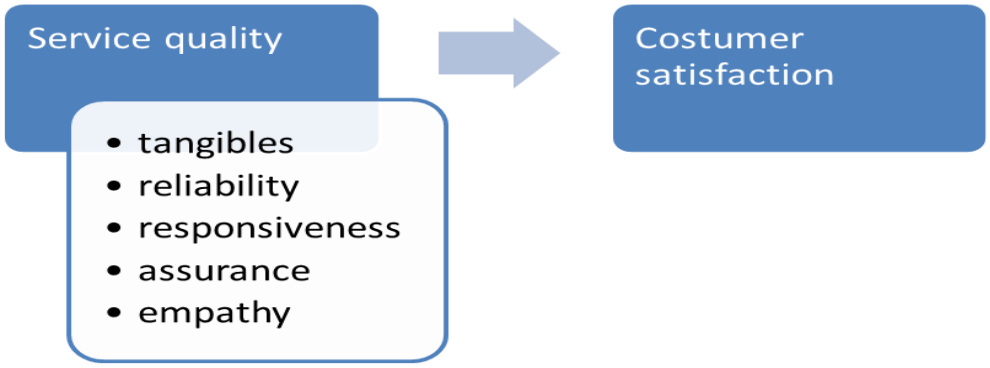

Figure 1 Conceptual Model Source Cronin & Taylor (1992)

2.5 Measure of Variables

Dependent variable: The dependent variable is the outcome influenced by the independent variable (Sekaran & Bougie, 2016). It represents the effect being measured in a study. For this study Customer Satisfaction is a dependent variable.

Independent Variable: **Service Quality** (Tangibility, Reliability, Responsiveness, Assurance, and Empathy) is an independent variable (Field, 2018). In a nutshell trying to see if good Service Quality (the stuff we do) leads to happy customers (Customer Satisfaction).

2.6 Research Hypothesis Summary

Educated guesses we call them hypotheses about how things work at ECX. Think of them as specific questions we're trying to find answers to.

H1: Tangibles has a significant relationship with customer satisfaction of ECX.

H2: Reliability has a significant relationship with customer satisfaction of ECX.

H3: Responsiveness has a significant relationship with customer satisfaction of ECX.

H4: Assurance has a significant relationship with customer satisfaction of ECX.

H5: Empathy has a significant relationship with customer satisfaction of ECX.

Chapter Three
Research Design and methodology

This chapter explains the research design and methodology used to investigate the impact of service quality of Ethiopian Commodity Exchange (ECX) on customer satisfaction. It includes description of the questionnaire, data sources and collection methods, sample size, and sampling strategy, overall research design data analysis techniques, validity, reliability, and finally ethical consideration.

3.1 Description of the Study Area

The research focus on the Ethiopian Commodity Exchange (ECX), an essential institution in Ethiopia, located in the Horn of Africa. Ethiopia, with its predominantly agrarian economy, relies heavily on the agricultural sector, making the ECX a critical component in modernizing the market system. The ECX was established to enhance market efficiency and provide transparent, reliable, and accessible trading for agricultural commodities.

The primary study area was Addis Ababa the capital city of Ethiopia where the ECX headquarters and major trading floors are situated. As the central trading hub, Addis Ababa plays a critical role in the functioning of the ECX. The city also serves as the administrative center for ECX's network of branch offices across the country, which manage trading and warehouse operations.

3.2 Research Design

As Kothari (2004) aptly describes it, a research design is "the arrangement of conditions for the collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure." For this particular study, the researcher takes a multi-pronged approach. using numerical data (making it quantitative), looking to uncover fresh insights (that's the exploratory part), and also formally testing specific predictions (which is the hypothesis-testing aspect). The main goal is to understand the key drivers behind customer satisfaction at the Ethiopian Commodity Exchange (ECX). To do this, the researcher first systematically looks at how the quality of ECX's services might influence customer satisfaction,

The researcher then dig a bit deeper with explanatory methods to find more comprehensive explanations, and finally, rigorously test initial ideas to see if the cause-and-effect relationships suspect between these elements truly hold up.

3.3 Research Approach

For this study, the researcher decided to go with a numbers focused (quantitative) method to really get to the bottom of the research questions and test initial hunches (hypotheses). This means worked with a specific group of participants, asked them a consistent set of questions, and provided them with pre-set answer choices. Svensson (2003) actually highlights that this kind of quantitative approach is particularly good for digging into the specific problems and viewpoints we're interested in, and for uncovering those less obvious attitudes, values, and what truly motivates people. Essentially taking what Bryman and Bell (2007) describe as a deductive path: start with some established theories and then gather and analyze data to see how well those theories actually apply in this situation. To collect numerical data in a consistent way that's easy to analyze, the researcher used a carefully structured questionnaire.

3.4 Population Sample size and sampling technique

All ECX members and non-member direct traders of coffee were the target population of the study currently ECX has 1663 traders. The basic simple random sampling approach was used to determine the sample size. Therefore, the target population of this study was 322. Samples were drawn randomly based on the respondents 'availability and interest to participate in the research. The sample size determination was made using a sample size calculation developed by Taro Yamane (1967).

It is calculated as follows:

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

Where: n= sample size

N= population size, and

e = sampling error assumed as 0.05 at 95% confidence level

$$n = \frac{1663}{1 + 1663(0.05)^2}$$

n = 322

3.5 Data Type and Collection Method

The researcher used primary and secondary data sources to ensure that the study's objectives were properly met.

3.5.1 Primary Data Collection

Primary data was collected using structured survey questionnaires with closed-ended questions, targeting both ECX members and non-member direct coffee traders. This approach might gather quantitative data on their perceptions and experiences.

3.5.2 Secondary Data Collection

Secondary data was sourced from various reports, publications, and policy documents related to the Ethiopian Commodity Exchange (ECX). This includes annual reports, market analyses, and regulatory frameworks.

3.5.3 Procedure of Data Collection

Data was gathered from primary and secondary sources. Primary data was collected using a carefully designed questionnaire aimed at minimizing invalid responses. For secondary data, information was obtained from the Ethiopian Commodity Exchange (ECX) regarding its services.

3.6 Method of Data Analysis

After collecting the surveys, the researchers might first sort the returned questionnaires to ensure that only responses from valid participants are included. The data analysis involves quantitative method. For quantitative data, descriptive statistics (mean, median, standard deviation) was used to summarize the data; while inferential statistics, including correlation and regression

analysis, was employed to identify relationship between variables. Statistical software package SPSS V25 was utilized to perform this analysis and to uncover patterns within the data.

3.7 Validity and Reliability

3.7.1 Validity

Think of validity as getting as close to the truth as possible. As Cook and Campbell (1979) put it, validity is "the best available approximation to the truth or falsity of a given inference, proposition, or conclusion." In simpler terms, Sounders et al. (2003) explain it as how well our methods for collecting data actually measure what we intended them to measure. For instance, Ahire et al. (1996) talk about "content validity," which means we checked if the questions in our survey really covered all the important aspects of the concepts we were studying.

3.7.2 Reliability

Reliability, on the other hand, is all about consistency. It checks if the questions in our survey (our "scale") are internally consistent and if our measurement tool is free from errors, so it gives us dependable results every time. It also gives us a clue about whether our questions are all pointing to one core idea or perhaps several different ones. A really common way to check this is using a statistical measure called Cronbach's alpha. This gives us a score, usually between 0 and 1. The higher the score, the more internally consistent and reliable our questions are. While different researchers might have slightly different benchmarks, Hair et al. (2003) note that a Cronbach's alpha value of 0.70 or higher is generally considered a good indicator of internal reliability.

Ensuring validity and reliability is crucial for credible research. In this study the researcher test the validity and reliability to check internal consistency by clearly defining and operationalizing key variables, using robust research designs to minimize confounding factors, and employing reliable instruments for data collection.

3.8 Ethical Consideration

The researcher might ensure all study participants are fully informed about the research's purpose, methods, and potential impacts, with clear consent obtained before participation. Provide information in local languages, ensuring participants understand their rights and can withdraw at any time. Protect participants' privacy by keeping data and securely storing sensitive information, ensuring results do not identify individuals. Conduct risk assessments to prevent harm and respect local cultures.

Chapter Four
Data Analysis and Presentation

4.1 Introduction

In this section, a clear breakdown of data analysis and the resulting interpretations of the study presented. The discussion will cover the achieved response rate, the characteristics of our participants, and descriptive statistics for both service quality and customer satisfaction. Furthermore, the findings from Pearson correlation analysis, which examined relationships between variables, and multiple regression analysis, which explored predictive factors included.

4.2 Response Rate

The study initial sample comprised 322 individuals, 274 fully completed and usable questionnaires, yielding a strong response rate of 85.09% response rate, conversely, 48 questionnaires representing 14.9% of those distributed for the main study, were not returned.

It's noteworthy that, according to established research guidelines by Cooper and Schindler (2003), a response rate of approximately 80% is typically deemed adequate and acceptable for an analysis to reliably reflect the opinions of the entire target population.

Table 1 Response Rate

Items	**Frequency**	**Percent**
Distributed Questioners	322	100%
Returned Questioners	274	85.09%
Not returned	48	14.9%

Source field survey 2025

4.3 Background Information of Respondents

To better understand the people who participated in this study, the researcher gathered some key information about them. This included their gender, their age, their educational background, membership type, trade type and trading experience.

Table 2: Background Information of Respondents

Characteristics	Items	Frequency	Percent
Gender	Male	219	79.9
	Female	55	20.1
	Total	274	100
Age	26-35	110	40.1
	36-45	122	44.5
	46 and above	42	15.3
	Total	274	100
Education Level	less than 12th Grade	19	6.9
	Diploma	45	16.4
	Degree	110	40.1
	2nd Degree or Above	100	36.5
	Total	274	100
Membership Type	Member	92	33.6
	Non-Member/direct trader	182	66.4
	Total	274	100
Indicate your trade type at ECX	Exporter	233	85
	Supplier	41	15
	Total	274	100
How long have you been in the coffee sector	Less than 4 years	77	28.1
	between 4 - 8years	67	24.5
	between 8-10 years	33	12
	above 10 years	97	35.4
	Total	274	100
How long have you been working with ECX	Less than 4 years	86	31.4
	between 4 - 8years	86	31.4
	between 8-10 years	62	22.6
	above 10 years	40	14.6
	Total	274	100

Source Field Survey 2025

The demographic makeup of our study group, as outlined in Table 2, shows a notable gender imbalance: men comprised a significant 79.9% of participants, with women representing the remaining 20.1%. This clearly points to a higher participation rate among men for this research.

Turning to age, Table 2 reveals that the largest segment of our respondents, at 44.5%, were in the 36-45 year age bracket. Following closely was those aged 26-35, who made up 40.1% of the group. The smallest age cohort, representing 15.3%, consisted of individuals aged 46 and older.

In terms of educational attainment, the data from Table 2 (based on 274 responses) indicates that a small fraction, 6.9%, had not completed 12th Grade. Those holding a diploma accounted for 16.4%. The most common qualification was a first degree, with 40.1% of participants falling into this category, while a substantial 36.5% held a Master's degree or higher. So, it's fair to say that individuals with a first degree were the most prevalent in our sample.

Table 2 also sheds light on the participants' affiliation: the majority, 66.4% of the 274 respondents, identified as Non-Members or direct traders. The other 33.6% were official Members.

Looking at experience within the broader coffee sector, Table 2 shows that the most seasoned group, those with over 10 years of experience, constituted 35.4% of respondents. Individuals with less than 4 years in the sector made up 28.1%, while 24.5% had between 4 and 8 years of experience. The remaining 12% reported 8 to 10 years in the coffee business.

When it comes to specific experience working with ECX, Table 2 indicates that a significant portion, 31.4% of respondents, had been engaged for less than 4 years, and an identical 31.4% had experience ranging from 4 to 8 years. Furthermore, 22.6% had worked with ECX for 8 to 10 years, and 14.6% had an engagement history of over 10 years.

Finally, Table 2 highlights the primary roles of our participants: an overwhelming 85% identified as Exporters, while Suppliers made up the remaining 15%. This stark difference underscores the dominant presence of Exporters in this particular study group.

The study explored the basic characteristics of the data using descriptive statistics. This initial step helps to understand the responses we received by looking at three key things for each

4.4 Descriptive Analysis for each variables

Variable: N (Valid Observations): The number of complete and usable responses we gathered. Mean: The average score for each set of responses. Standard Deviation: A measure of how spread out or varied the responses were from that average. These descriptive measures are particularly useful for getting a sense of the overall patterns in our data. We paid close attention to what the mean and standard deviation values were telling us.

The mean score is simply the average of all the responses for a particular item. In the context of this study, the researcher generally interpret a lower mean score as an indication that respondents tended to disagree with a statement or rated something lower. Conversely, a higher mean score suggests a general tendency towards agreement or a higher rating. To provide a consistent framework for interpreting these mean scores, the researcher adopted the guidelines suggested by Field (2009). According to this approach: A mean score below 2.5 is considered 'low' Scores ranging from 2.5 up to 2.99 are seen as 'moderate.' Any mean score 3.00 or above is classified as 'high. The standard deviation, on the other hand, gives us insight into how much individual responses clustered around the mean. A small standard deviation indicates that most participants responded quite similarly, showing a high degree of consistency. A larger standard deviation suggests a wider range of opinions or more varied responses.

Using these tools, the researcher aim was to thoroughly describe each of the independent variables relevant to the study area, providing a clear snapshot of the participant feedback for each.

Table 3 Descriptive Statics of determinants

Variables	**N**	**Mean**	**Std. Deviation**
Tangibility	274	4.09	.544
Reliability	274	3.95	.609
Responsiveness	274	3.87	.737
Assurance	274	3.80	.881

Empathy	274	3.85	.694
Customer satisfaction	274	3.84	.756

Source – Researcher's Computation through SPSS 2025

To get a good handle on what the survey participants told us, the researcher started by looking at the basic patterns in their responses. Calculated the average scores (means) and how spreads out those scores were (standard deviations). A big part of this study understood what these average scores and standard deviations actually meant. Essentially, the mean gives us a sense of the overall leaning: if it's low, it suggests people generally disagreed, but if it's high, it points to agreement.

When we looked at Table 3, some clear trends emerged:

For Responsiveness, the average score was quite high (M=3.87), well over a 3.0 benchmark, and people's opinions didn't vary much (SD=0.737). This tells us there was strong agreement.

Reliability also scored highly (M=3.95), with participants' views being pretty consistent (SD=0.609). As Field (2009) suggests, this low standard deviation indicates little variation in how people responded.

Tangibility received a strong average score of 4.09. Again, citing Field (2009), the standard deviation of 0.544 shows that responses on this aspect were quite similar, with low variation among participants.

Empathy also showed a high average (M=3.85), comfortably above 3.0, and the responses were quite closely clustered, showing low variation (SD=0.694).

Looking further at Table 3, we can see that Assurance also received a strong average score of 3.80, which is comfortably above the midpoint. The standard deviation here was 0.881, telling us that while there was a little more spread in responses compared to some other areas; people's opinions about Assurance were still generally quite consistent.

When it comes to Customer Satisfaction, Table 3 shows an average score of 3.84 and a standard deviation of 0.756. This pattern suggests a positive overall sentiment with a fair degree of agreement among the participants.

Table 4 One Sample Test

Variables	**Test Value = 3.51**					
	T	**df**	**Sig. (2-tailed)**	**Mean Difference**	**95% confidence interval of difference**	
					Lower	**Upper**
Tangibility	13.568	273	.000	.58375	.4988	.6687
Reliability	9.308	273	.000	.44875	.3535	.5440
Responsiveness	2.581	273	.011	.20406	.0479	.3602
Assurance	6.161	273	.000	.33844	.2299	.4469
Empathy	4.162	273	.000	.29000	.1524	.4276
Customer satisfaction	5.565	273	.000	.33271	.2146	.4508

Source – Researcher's Computation through SPSS 2025

The details in Table 4, which presents the results of a one-sample test, we noticed a clear pattern. For customer satisfaction and for all the other elements we looked at like Tangibility, Reliability, Responsiveness, Assurance, and Empathy the 'mean difference' from the test value was always positive.

This is a significant finding because it suggests that all these factors have the potential to positively sway customer satisfaction. Essentially, improvements in these areas seem to be linked to an increase in how satisfied customers are. It's also encouraging that our results line up with what previous researchers, such as Nguyen & Leblanc (2001) and Lo Liang Khen et al. (2010), discovered in their studies.

4.5 Inferential analysis

4.5.1 Reliability

Table 5 details the reliability checks using Cronbach's Alpha. For each section of the test, the alpha values fell between 0.729 and 0.870. Impressively, the average alpha score across all test items was 0.773. This figure is widely considered to indicate good internal consistency. In practical terms, these strong alpha scores give us confidence that our methods for measuring both the independent and dependent variables were reliable.

Table 5 Summary of reliability Test

Dimension of the Service Quality	No. of samples	Cronbach's alpha (Perceptions)
Tangibility	28	.849
Reliability	28	.729
Responsiveness	28	.835
Assurance	28	.818
Empathy	28	.829
Customer satisfaction	28	.842

Source: Field Survey 2025

4.5.1 Correlation Analysis

To understand how different aspects of the study might be connected, the researcher looked into their relationships something statisticians call 'correlation.' Think of it like seeing if two things tend to move together. For example, does an increase in one thing usually mean an increase (or decrease) in another?

The specific method used was Pearson's correlation, a very common technique. This method gives a score, called 'r' that ranges from 1 to + 1.If the score is close to 1, it means there's a strong positive connection: when one thing goes up, the other tends to go up too. If it's near -1,

there's a strong negative connection: when one goes up, the other tends to go down. A score around 0 means there's hardly any link between them. To make sense of these scores, the study used the following general guidelines: A score between -.3 and .3 suggests a pretty weak link. Scores between -.5 to -.3 (negative) or .3 to .5 (positive) point to a moderate, or noticeable, connection. If the score falls between -.9 to -.5 (negative) or .5 to .9 (positive), that's considered a strong relationship. And anything from -.1.0 to -.9 (negative) or .9 to 1.0 (positive) indicates a very powerful connection.

Table 6 correlation coefficients

Variables	**TAN**	**REL**	**RESP**	**ASSU**	**EMPA**	**CUSA**
TAN	1					
REL	.226**	1				
RESP	.479**	.510**	1			
ASSU	.470**	.465**	.814**	1		
EMPA	.515**	.530**	.747**	.818**	1	
CUSA	.457**	.772**	.775**	.668**	.782**	1
N	274	274	274	274	274	274

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

Source – Field Survey 2025

Now, looking at Table 6, we can see how these connections played out between different factors like Tangibles (TAN), Reliability (REL), Responsiveness (RESP), Assurance (ASSU) Customer Satisfaction (CUSA). This analysis involved 274 participants.

Most of the numbers you see in the table have a double asterisk (**) next to them. This is important because it means those particular relationships are statistically significant (at the 0.01 level). In simple terms, it's highly unlikely these connections happened just by chance; there's a real pattern there. For example: The connection between Assurance (ASSU) and Tangibles (TAN) is .470 (also significant). This indicates a moderate positive relationship. Even a weaker

connection, like between Reliability (REL) and Tangibles (TAN) at .226 (significant), still suggests a small but statistically real positive link.

This part of the research essentially maps out which factors are related, how strongly they're related, and whether those relationships are likely real or just a fluke, based on the data from the 274 participants.

The study found that all the different aspects we looked at are definitely connected to each other. These aren't just random links; they're statistically solid (all significant at the 1% level), with the connections ranging from moderately strong to quite strong (correlation strengths, or 'r values', were between 0.457 and 0.782, as you can see in Table 6).

Things like reliability (making sure things work as they should, r = .772), being responsive (quick to help, r = .775), offering assurance (building trust and confidence, r = .668), showing empathy (understanding customer needs, r = .782), all showed a strong, positive relationship with how satisfied customers felt. Essentially, the better the service in these areas, the happier the customers were (and these results are very reliable, with $p<0.01$).

Tangibility (the physical side of things, like appearance, r = .457) also had a positive link to customer satisfaction, though this connection was more moderate compared to the others (still very significant with $p<0.01$).

So, to put it simply: reliability, responsiveness, assurance, and empathy really boost customer satisfaction in a big way. Tangibility also helps make customers satisfied, just to a more moderate degree.

4.6 Multiple Regression Assumptions

4.6.1 Normality Test

When we're building a multiple regression model, one of the important health checks for our data is to see if it's 'normally distributed' basically, does it look like that familiar bell curve? We can get a good sense of this by looking at two main characteristics: how peaked or flat it is (kurtosis) and whether it's lopsided (skewness). Think of kurtosis as describing the 'shoulders' and 'peak' of our data's shape. A perfect bell curve has a kurtosis of zero. If we see positive kurtosis, it means

our data is more bunched up in the middle, creating a sharper peak and 'thinner shoulders' than a normal curve. However, this also often means the very extreme ends (the 'tails') can be a bit heavier or fatter, as some values stretch out further. With negative kurtosis, the data is more spread out and flatter, with a lower peak and 'broader shoulders.' The tails at the very extremes tend to be lighter or thinner than a typical bell curve.

Then there's skewness, which tells us if our data leans more to one side. Anjom, and Karim (2015) states A skewness of zero means our data is perfectly symmetrical the left and right sides are mirror images, just like a bell curve. If we have positive skewness, it means the right 'tail' of our data is longer; it's stretched out more to the right. And if its negative skewness, the left 'tail' is longer, meaning it's stretched out more to the left.

There is no theoretical limit to this measure, however, in practice the value given by this formula falls between -3 and 3. Based on this information, when we see the descriptive statistics below in table 7, we can understand the data distribution is normal.

Table 1 Normality test

Variables	**N**	**Skewness**		**Kurtosis**	
	Statistic	**Statistic**	**Std. Error**	**Statistic**	**Std. Error**
Tangibility	274	-1.344	.209	2.345	.416
Reliability	274	-1.824	.209	1.200	.416
Responsiveness	274	-.201	.209	1.373	.416
Assurance	274	-2.209	.209	1.876	.416
Empathy	274	-1.629	.209	2.478	.416
Customer satisfaction	274	-.247	.209	2.132	.416

Source- Field Survey 2025

4.6.2 Linearity Test

Another important check for our regression model is something called linearity (Saunders, et al., 2003).Think of it this way: we want to know if the relationship between what we're trying to predict (our main outcome or dependent variable) and the factors influencing it (our independent

variables) generally follows a straight line. To see if this is the case, we often use a visual tool called a normal probability plot. Imagine plotting our data points on a graph that has a diagonal line running across it. If our assumption about a linear relationship (and the related assumption of normally distributed residuals) holds true, we'd expect to see our data points arranged pretty closely along that diagonal line. In our particular study, when we look at Figure 2, the points do indeed cluster nicely around that diagonal. This tells us that the connection between the variables we're examining appears to be linear, which is exactly what we need for our regression model to work well.

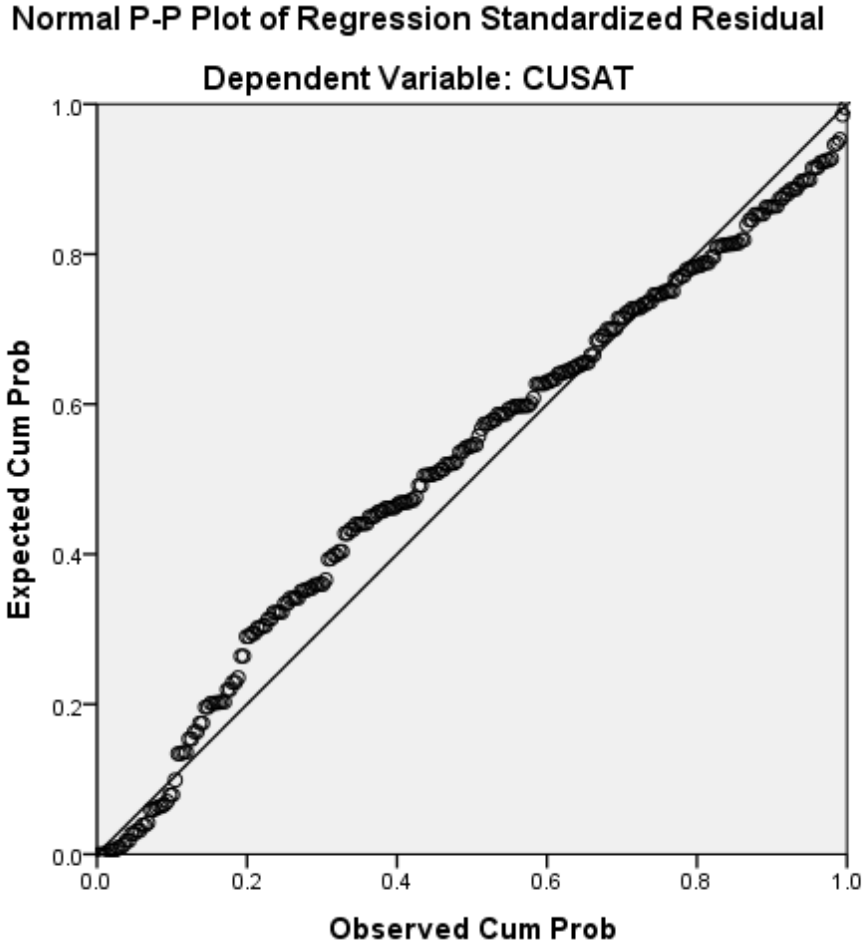

Figure 2 Linearity Test

Source – Researcher's Computation through SPSS 2025

4.6.3 Homoscedasticity Test

When we build a model to predict something, we're also interested in how 'off' our predictions are these are called residuals, or our prediction errors. Homoscedasticity is a bit of a mouthful, but it simply means we want the size of these prediction errors to be pretty consistent, no matter what value we're trying to predict Field (2009). Think of it like this: the 'fuzziness' or 'scatter' around our prediction line should be roughly the same all the way along. A great way to check this is by looking at a special kind of picture called a scatter plot. In this plot, we're specifically looking at our prediction errors (the residuals) compared to the values our model actually predicted. So, when we look at Figure 3, the fact that the points are spread out fairly evenly, without any obvious fanning-out or narrowing, is a good sign. It tells us that our data seems to meet this homoscedasticity assumption, which makes us more confident in the reliability of our regression results.

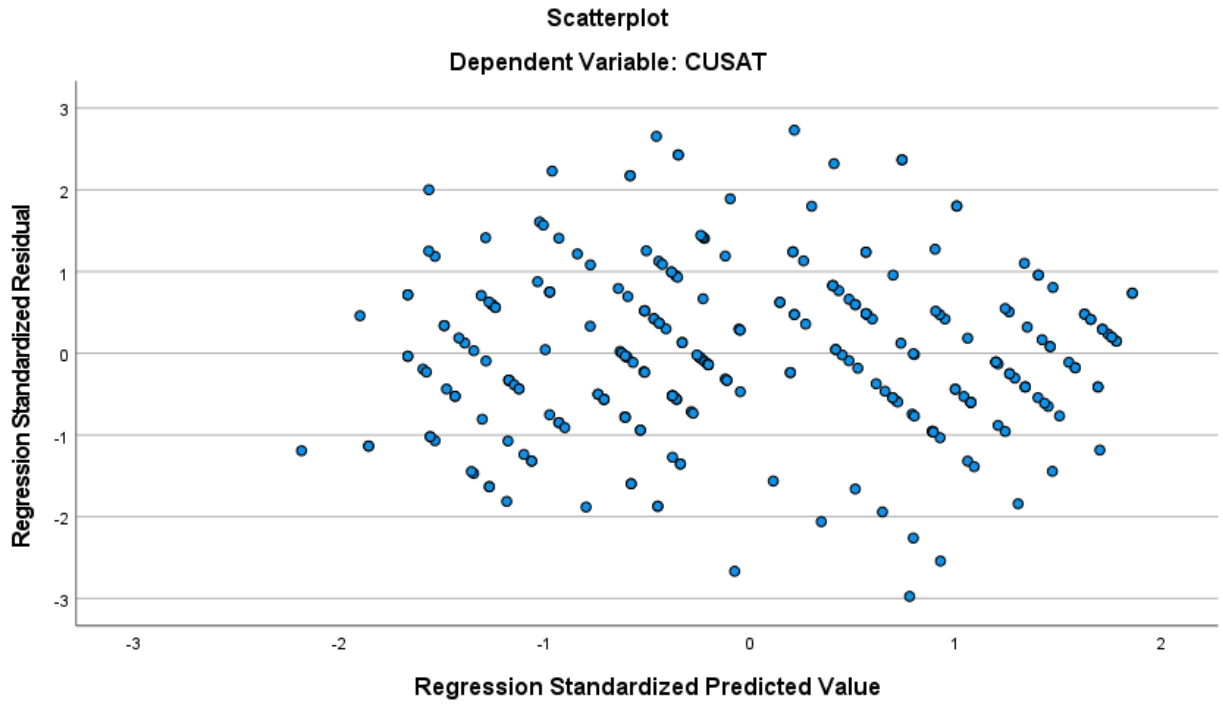

Figure 3 Homogeneity Test

Source – Researcher's Computation through SPSS 2025

4.6.4 Multicollinearity Test

When we're building a model with several factors (our predictor variables) to explain an outcome, we ideally want each of these factors to bring its own unique piece of information to the puzzle. The trouble starts when some of our predictor variables are too similar to each other essentially; they're telling us much of the same story or are highly related. This overlap is what we call multicollinearity. If exist it make it difficult to pinpoint the individual effect of each variable because their influences get tangled up. It can make our model's results unreliable. Gujarati (2004) stated that to diagnose multicolliniarity we see Tolerance. If this value gets really small (a common rule of thumb is if it drops below 0.1), it suggests that a particular variable is largely a combination of other variables in the model. And perhaps more popular, detective tool is the Variance Inflation Factor (VIF). Just like its name sounds, a high VIF means that the variance (or the 'wobbliness') of a predictor's estimated effect is being 'inflated' because it's so closely related to other predictors. If a VIF value climbs too high (often, a VIF greater than 10 is seen as a problem), it signals that multicollinearity might be messing with our model's clarity.

Table 8 Multicollinearity Test

Model 1		**Co linearity statistics**	
		Tolerance	**VIF**
	Tangibility	.716	1.397
	Reliability	.639	1.565
	Responsiveness	.296	5.383
	Assurance	.292	6.422
	Empathy	.376	7.227

Dependent Variable: CUSAT

Source- Field survey 2025

When we look at our Variance Inflation Factor (VIF) scores in Table 8, they all fall somewhere between 1.397 and 7.227. And for the Tolerance values, they range from .292 up to .639. What this tells us is that our predictors variables aren't overly tangled up with each other they're not just repeating the same information in different ways. Each one seems to be making a reasonably independent contribution to our model. Because we don't see any red flags for multicollinearity,

we can be much more confident that our regression model is on solid ground and that the findings from it are reliable.

4.7 Analysis of Multiple Regressions

4.7.1 To examine the impact of service quality of ECX on customer satisfaction

The researcher aimed to understand the link between ECX's service quality and how satisfied its customers are. To do this, planned to create a predictive model, a concept highlighted by Brooks (2008) for forecasting a key outcome (the dependent variable) using several influential factors (independent variables). For this specific research, chose multiple regression analysis. This method allowed looking at how a combination of different service elements tangibility, reliability, responsiveness, assurance, and empathy jointly impact customer satisfaction.

Table 2 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durin-Wasto n
					R Square Change	F Change	df 1	df2	Sig. F cha nge	
1	.832[a]	.692	.680	.37208	.692	142.901	5	268	.000	2.142

a. Predictors:(Constant) TAN,REL,ASSU,RESP,EMPA

b. Dependent Variable: CUSA

Source – Field Survey 2025

Looking at the results (referred to as 'the above table 9'), we can see how all the service aspects we studied work together to affect customer satisfaction. The key takeaway is that our model, measured by the adjusted R-squared, can explain 68.0% of why customer satisfaction levels vary. This means that the five factors we focused on tangibility, reliability, responsiveness, assurance, and empathy are responsible for a large chunk (68.0%) of what makes customers satisfied. Of course, this also tells us that about 32% of the reasons for customer satisfaction levels come from other influences not included in this particular study.

Table 10 ANOVA for Regression

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	138.106	5	16.478	142.901	.000[b]
	Residual	30.112	267	.109		
	Total	168.218	273			

a. Dependent Variable: CUSAT

b. Predictors: TAN,REL,ASSU,RESP,EMPA

Source Field Survey- 2025

Table 10 provides a check on how well the entire multiple regression models fits the data, which, as Field (2009) points out, is a crucial step. The ANOVA results, which assess the overall significance of the model, were very telling. With an F-statistic of (5, 268) = 142.901 and a p-value below .01, the findings are highly significant. This strongly suggests that the different service quality aspects (the independent variables) really do make a difference to customer satisfaction (the dependent variable). Consequently, we can confidently say that the combined impact of these studied factors is a good predictor of customer satisfaction.

Table 11 Coefficients of service quality on customer satisfaction

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.052	.078		.666	.506
	Tangibility	.566	.050	.521	11.262	.000
	Reliability	.164	.053	.174	3.091	.002
	Responsiveness	.187	.078	.165	3.071	.012
	Assurance	.021	.059	.023	.360	.720
	Empathy	.157	.045	.167	3.458	.001

a. Dependent Variable: CUSAT

Source- Field Survey, 2025

Looking at the data in Table 11 above, it's clear that when services are more tangible, reliable, responsive, and empathetic, customers tend to be more satisfied. The study found a strong, positive link for these four aspects. However, for assurance, the results didn't show a significant connection to customer satisfaction in this particular research, suggesting they weren't key drivers of satisfaction here.

4.8 Hypothesis Testing

Using the findings from our multiple linear regression analyses, the researcher was able to determine the statistical significance of the proposed relationships. This, in turn, allowed making informed decisions about whether to accept or reject the 5 hypotheses we had set up. These hypotheses explored the connections between each specific dimension of service quality, as well as their overall combined influence. The results of these tests are detailed below.

Table 12 Hypothesis testing

Hypotheses	**Standardized Coefficients**	**P-Value**	**Decision**
H1: Tangibles has a significant relationship with customer satisfaction of ECX.	.521	.000	Accepted
H2: Reliability has a significant relationship with customer satisfaction of ECX.	.174	.002	Accepted
H3: Responsiveness has a significant relationship with customer satisfaction of ECX.	.165	.012	Accepted
H4: Assurance has a significant relationship with customer satisfaction of ECX.	.023	.720	Rejected
H5: Empathy has a significant relationship with customer satisfaction of ECX.	.167	.001	Accepted

4.9 Discussions of the Result

In this section, delve into the specific outcomes of our hypothesis tests, drawing on the multiple linear regression results. Explore how each proposed relationship fared when put to the statistical test, leading to decisions about whether our initial ideas were supported by the data from the Ethiopian Commodity Exchange (ECX).

Tangibility and Customer Satisfaction:

Our analysis of the data in Table 12 above showed a clear, significant link between the tangibility of services and customer satisfaction. With a p-value of 0.000 (well below the 0.05 threshold at a 95% significance level), this finding was statistically strong. This means that the physical aspects of the ECX service play an important role in how satisfied customers feel. Consequently, we rejected the null hypothesis and accepted the alternative, a conclusion that aligns well with earlier research by Saravanan & Rao (2007) and Bougoure & Lee (2009).

Reliability and Customer Satisfaction:

Similarly, reliability proved to be a significant factor. The results in Table 16 indicate a p-value of 0.002 (again, much lower than 0.05, tested at a 95% significance level), pointing to a robust positive relationship between service reliability at ECX and customer satisfaction. This strong evidence led us to reject the null hypothesis in favor of the alternative. This outcome supports previous findings by researchers like Negi (2009) and Nguyen & Leblanc (2001).

Responsiveness and Customer Satisfaction:

When it came to responsiveness, Table 12 again revealed a significant and positive connection to customer satisfaction at ECX. Tested at a 95% significance level, the p-value of 0.012 confirms this important relationship. As a result, we confidently rejected the null hypothesis and accepted the alternative. This finding is consistent with studies by Nguyen & Leblanc (2001) and Bellini et al. (2005).

Empathy and Customer Satisfaction:

The empathy dimension also showed a significant positive relationship with customer satisfaction within the ECX context. As detailed in Table 12, with a p-value of 0.001 (below the 0.05 mark at a 95% significance level), we rejected the null hypothesis and accepted the alternative. This finding resonates with earlier work by Ladhari (2009) and Shahin (2005).

Assurance and Customer Satisfaction:

When tested at a 95% significance level, assurance did not reach statistical significance. The p-value of 0.720, being much greater than 0.05, meant we could not reject the null hypothesis. This suggests this specific dimension didn't have a significant influence on customer satisfaction at ECX in our study. This outcome differs from previous research by Nguyen & Leblanc (2001) and Saravanan (2007).

Chapter Five

Summary Conclusions and Recommendations

5.1 Summary

To get to the heart of the research questions, the researcher took a numbers based (quantitative) approach, specifically using an explanatory research design. gathered feedback from 274 individuals who were conveniently available, using a random selection technique. The researcher main tool for collecting this information was a well-organized survey with pre-set answer choices, where participants rated their responses on a five-point Likert scale. To see if the initial ideas (hypotheses) held up, the researcher used multiple regression models to analyze the data.

One aspect looked at was tangibility essentially, the physical side of the service. The researcher measured these using four specific items in the survey to understand how people perceived the physical environment.

When explored how different elements of service quality connect with customer satisfaction (which we saw as a key link in the chain), the numbers told an interesting story. The strength of the connection (correlation coefficient, 'r') for each was: Tangibility: ($r = .457$, $p < 0.01$) Reliability: ($r = .772$, $p < 0.01$) Responsiveness: ($r = .775$, $p < 0.01$) Assurance: ($r = .668$, $p < 0.01$) Empathy: ($r = .782$, $p < 0.01$).

These results show a strong, positive link between customer satisfaction and six key factors: reliability, responsiveness, assurance, and empathy. Tangibility, on the other hand, showed a moderate, though still positive, relationship with customer satisfaction.

The analysis revealed some pretty compelling insights. When looked at what influences customer satisfaction, the researcher findings show that a substantial 68.0% (Adjusted R squared) of the differences we see in satisfaction levels can be accounted for by the five factors. The researcher studied: tangibility, reliability, responsiveness, assurance, and empathy. What this means is that these six elements together are major drivers of how satisfied customers feel. The remaining 32% of what shapes customer satisfaction is due to other factors that weren't part of this particular study.

The overall statistical model the researcher used also gave strong results ($F(5, 268) = 142.901$, $p < .01$). This tells us that the five factors we examined don't just have a random connection to customer satisfaction; they significantly influence it. So, can confidently say that, as a group, these elements are powerful predictors of how satisfied customers are likely to be.

5.2 Conclusions

To get to the bottom of this research questions, the researcher set out to test 5 specific ideas (hypotheses). Used a statistical technique called multiple regression to see if these ideas held up. Based on all the number crunching and summary of the results, here's what the researcher concluded:

5.2.1 To examine the impact of service quality on customer satisfaction

When looked at the impact of different service quality aspects on customer satisfaction specifically at the Ethiopian Commodity Exchange (ECX), findings painted an interesting picture: Four elements tangibility (the physical environment), reliability (dependable service), responsiveness (prompt help), and empathy (caring attention) all showed a significant and positive effect. This means these factors clearly boost customer satisfaction at the ECX. On the other hand, assurance (trust and confidence) didn't appear to have a statistically significant impact on customer satisfaction in this particular study (as indicated by their insignificant alpha value).

Despite some individual factors not showing a strong direct link, when we looked at the bigger picture, results indicated that a very substantial 68.0% (Adjusted R squared) of the differences in customer satisfaction levels can be explained by the combined influence of all five service quality dimensions we examined (tangibility, reliability, responsiveness, assurance, and empathy). Essentially, these five factors together are major drivers of how satisfied customers feel. The remaining 32% of what influences customer satisfaction is due to other factors not covered in this research.

5.3 Recommendations

Based on what the researcher learned from this study, here are some practical suggestions for the Ethiopian Commodity Exchange (ECX) to enhance its service quality:

- The Ethiopian Commodity Exchange (ECX) should invest in teams: Regular training is key Equip to ECX staff with the skills to provide service that is both caring and quick. Recognize and reward employees who excel at delivering quality service and receive positive feedback from customers. This encourages everyone to strive for excellence. ECX will make sure team is well-versed in all aspects of service quality and market information. Prioritize training that helps them understand these areas deeply, so they can effectively solve customer problems and deliver services as promised.

- The Ethiopian Commodity Exchange (ECX) should tune In to Customers: To really improve service and meet customer needs, the Ethiopian Commodity Exchange (ECX) needs to pay close attention to customer complaints and expectations, and offer personalized attention. This will help ECX to truly understand what there customers need and how best to satisfy them. Supervisors should actively encourage a culture of continuous service improvement and a proactive, problem-solving attitude throughout the company.

- The Ethiopian Commodity Exchange (ECX) should be responsive and resolve issues effectively: It's vital for the company to understand the specific needs of its customers. Ensuring employees respond promptly to requests or complaints is crucial for boosting satisfaction. This means having a system for immediate responses to customer complaints and making quick, appropriate decisions to fix problems. Implementing a modern system for handling customer complaints and grievances would be a big step in the right direction.

- The Ethiopian Commodity Exchange (ECX) should prioritize actions that will lead to effective and lasting positive outcomes. Sometimes, it's more important to do what's

strategically right for long-term success, even if it's not the most immediately profitable option.

5.4 Future Research Directions

In light of the aforementioned limitations, several directions for future research are proposed to enhance the scope, depth, and applicability of similar studies:

- Segment Customer Groups: Future studies are advised to analyze service quality perceptions across different customer segments such as exporters and suppliers,. These groups may have distinct service needs and expectations, and analyzing them separately could yield more actionable insights for ECX service improvement.
- Expand Geographic Scope: Broader geographic coverage including regional ECX branches and rural trading centers should be considered in future studies. This would help identify any regional disparities in service quality delivery and tailor improvement strategies accordingly.

Reference

Abebe Degife, W., & Abiot Sinamo, D. ing. (2019). Efficient Predictive Model for Determining Critical Factors Affecting Commodity Price: The Case of Coffee in Ethiopian Commodity Exchange (ECX). *International Journal of Information Engineering and Electronic Business*, *11*(6), 32–36. https://doi.org/10.5815/ijieeb.2019.06.05

Achille, C., Mezui, M., Rutten, L., Sekioua, S., Zhang, J., Magor N'diaye, M., Kabanyane, N., Arvanitis, Y., Duru, U., & Nekati, B. (2013). *Guidebook on African Commodity and Derivatives Exchanges*.

Adil, M., Falah, O., Al, M., & Albkour, A. M. (2013). *SERVQUAL and SERVPERF: A Review of Measures in ServicesMarketing Research*. *13*(6).

Ayecha, K. (n.d.). *AN ASSESSMENT ON MARKET INTEGRITY OF ETHIOPIAN COMMODITY EXCHANGE*.

Balcha, A. (2024). The Influence of Service Quality on Customer Satisfaction and Loyalty in Ethiopian Private Banks. *African Journal of Management Research*, *30*(1), 17. https://doi.org/10.4314/ajmr.v30i1.2

Bitsat, T. (2021). The Effect of Service Quality on Customer Satisfaction; in Case of Commercial Bank of Ethiopia. *Journal of Engineering and Economic Development*, *3*(2), 1.

Caruana, A. (2002). Service loyalty: The effects of service quality and the mediating role of customer satisfaction. *European Journal of Marketing*, *36*(7–8), 811–828. https://doi.org/10.1108/03090560210430818

Chala, A. (2022). *SCHOOL OF GRADUATE STUDIES INSTITUTE OF QUALITY AND PRODUCTIVITY MANAGEMENT ASSESEMENT OF SERVICE QUALITY ON CUSTOMER SATISFACTION:-THE CASE OF ETHIOPIAN COMMODITY EXCHANGE ADDIS ABEBA, ETHIOPIA*.

Deressa, F. M. (2014). *Predictive Model for ECX Coffee Contracts Addis Ababa*.

Gabre-Madhin, E. (n.d.). *A MArket for Abdu Creating a Commodity Exchange in Ethiopia*.

Gezahegn, H. (2018). *SCHOOL OF GRADUATE STUDIES OPERATIONAL PERFORMANCE OF ETHIOPIAN COMMODITY EXCHANGE(ECX) AND ITS EFFECT ON CUSTOMER SATISFACTION ADDIS ABABA, ETHIOPIA*.

Handino, T. D., D'Haese, M., Demise, F., & Tamirat, M. (2019). De-commoditizing Ethiopian coffees after the establishment of the Ethiopian Commodity Exchange: An empirical investigation of smallholder coffee producers in Ethiopia. *International Food and Agribusiness Management Review*, *22*(4), 499–518. https://doi.org/10.22434/IFAMR2018.0047

Hernandez, M. A., Lemma, S., & Rashid, S. (n.d.). *The Ethiopian Commodity Exchange and the coffee market: Are local prices more integrated to global markets?*

Hernandez, M. A., Rashid, S., & Lemma, S. (2015). *Institutions and Market Integration: The Case of Coffee in the Ethiopian Commodity Exchange*.

Hidayat, M. A., Rasyid, A., & Pasolo, F. (2024). Service Quality on Customer Loyalty: Mediation of Customer Satisfaction. *Advances in Business & Industrial Marketing Research*, *2*(3), 150–163. https://doi.org/10.60079/abim.v2i3.158

Hofstede, G. (2011). Dimensionalizing Cultures. *Online Readings in Psychology and Culture*, *2*(1), 1–26.

Huang, P. L., Lee, B. C. Y., & Chen, C. C. (2019). The influence of service quality on customer satisfaction and loyalty in B2B technology service industry. *Total Quality Management and Business Excellence*, *30*(13–14), 1449–1465. https://doi.org/10.1080/14783363.2017.1372184

Jain, S. K., & Gupta, G. (2004). Measuring Service Quality: Servqual vs. Servperf Scales. *Vikalpa*, *29*(2), 25–38. https://doi.org/10.1177/0256090920040203

Kumar, A. (2020). Effect of service quality on customer loyalty and the mediating role of customer satisfaction: An empirical investigation for the telecom service industry. *Journal of Management Research and Analysis*, *5*(1), 34–41. https://doi.org/10.18231/2394-2770.2018.0007

Le, P., & Fitzgerald, G. (2017). Applying the SERVPERF scale to evaluate quality of care in two public Hospitals at Khanh Hoa province, Vietnam. *Asian Pacific Journal of Health Sciences*, *9*(2), 66–76.

Mosahab, R., Mahamad, O., & Ramayah, T. (2010). Service Quality, Customer Satisfaction and Loyalty: a Test of Mediation. *International Business Research*, *3*(4), 72–80. https://doi.org/10.5539/ibr.v3n4p72

Nguyen, N. X., Tran, K., & Nguyen, T. A. (2021). Impact of service quality on in-patients' satisfaction, perceived value, and customer loyalty: A mixed-methods study from a developing country. *Patient Preference and Adherence*, *15*, 2523–2538. https://doi.org/10.2147/PPA.S333586

Nikou, S., & Khiabani, M. M. (2020). Service Quality, Mediation Effect of Customer Satisfaction, Customer Loyalty, and Moderating Role of Interpersonal Relationship: Case of Four-Star Hotels in Kuala Lumpur, Malaysia. *Asian Journal of Economics, Business and Accounting*, *19*(4), 1–18. https://doi.org/10.9734/ajeba/2020/v19i430309

Of, C., & Bank, D. (2021). *COLLEGE OF BUSINESS AND ECONOMICS DEPARTMENT OF MANAGEMENT EFFECT OF SERVICE QUALITY ON CUSTOMER SATSFACTION ; THE A RESEARCH SUBMITTED IN PARTIAL FULFILMENT OF THE BY : DAGNACHEW ASSEFA ADVISOR : TEWODROS WUHIB (Assistant Professor)*.

P.J, S., Singh, K., Kokkranikal, J., Bharadwaj, R., Rai, S., & Antony, J. (2023). Service Quality and Customer Satisfaction in Hospitality, Leisure, Sport and Tourism: An Assessment of Research in Web of Science. *Journal of Quality Assurance in Hospitality and Tourism*, *24*(1), 24–50. https://doi.org/10.1080/1528008X.2021.2012735

Petit, N. (2007). Ethiopia's coffee sector: A bitter or better future? *Journal of Agrarian Change*, *7*(2), 225–263. https://doi.org/10.1111/j.1471-0366.2007.00145.x

Phan Thi Hang, N., & Kim Quoc Trung, N. (2024). Service quality, customer satisfaction and loyalty: a case study in Vietnamese SMEs. *Cogent Business and Management*, *11*(1). https://doi.org/10.1080/23311975.2024.2377769

Quinetta M. Roberson. (2005). W ORKING P APER S ERIES Disentangling the Meanings of Diversity and Inclusion. *Library*.

Rashid, S., & Fellow, S. R. (n.d.). *Give to AgEcon Search Commodity Exchanges and Market Development: What Have we Learned? 1*. http://ageconsearch.umn.edu

Rashid, S., Garcia, A. W.-N. P., Winter-Nelson, A., & Garcia, P. (2010). *Purpose and Potential for Commodity Exchanges in African Economies*. http://www.ifpri.org/publications/results/taxonomy%3A468.

Rasyida, D. R., Mujiya Ulkhaq, M., Setiowati, P. R., & Setyorini, N. A. (2016). Assessing Service Quality: A Combination of SERVPERF and Importance-Performance Analysis. *MATEC Web of Conferences*, *68*(April). https://doi.org/10.1051/matecconf/20166806003

Rawat, K., & Kumar, T. R. (2017). The Mediating Role of Customer Satisfaction in the Relationship between Service Quality and Customer Retention. *Asian Journal of Research in Social Sciences and Humanities*, *7*(10), 401. https://doi.org/10.5958/2249-7315.2017.00513.5

Review on Coffee Production and Marketing in Ethiopia. (2020). *Journal of Marketing and Consumer Research*. https://doi.org/10.7176/jmcr/67-02

Ros, M., Schwartz, S. H., & Shoshana, S. (2015). Basic Individual Values , Work Values , and the Meaning of Work Basic Individual Values , Work Values , and the Meaning of Work. *Applied Psychology: An International Review*, *48*(JANUARY 1999), 49–71.

School of Business and Economics Department of Management Graduate Programs EMBA Programme The Impact of Service Quality on Customer Satisfaction and Loyalty in the Ethiopian Insurance Industry Approval Board Committee. (n.d.).

Shanka, M. S. (2012). Bank Service Quality, Customer Satisfaction and Loyalty in Ethiopian Banking Sector. *Journal of Business Administration and Management Sciences Research*, *1*(1), 1–9. http://www.apexjournal.org/JBAMSR

Shibiru, H. (2019). *COLLEGE OF BUSINESS AND ECONOMICS DEPARTMENT OF MANAGEMENT THE EFFECT OF SERVICE QUALITY ON CUSTOMER LOYALTY AT COMMERCIAL BANK OF ETHIOPIA : THE MEDIATING ROLE OF CUSTOMER SATISFACTION By A Thesis Submitted to Addis Ababa University , College of Business*.

Srivastava, M., & Rai, A. K. (2013). Investigating the mediating effect of customer satisfaction in the service quality - customer loyalty relationship. *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, *26*, 95–109. http://journalconsumersatisfaction.weebly.com/

Supriyanto, A., Wiyono, B. B., & Burhanuddin, B. (2021). Effects of service quality and customer satisfaction on loyalty of bank customers. *Cogent Business and Management*, *8*(1).

https://doi.org/10.1080/23311975.2021.1937847

Tefera, O., & Govender, K. (2017). Service quality, customer satisfaction and loyalty: The perceptions of Ethiopian hotel guests. *African Journal of Hospitality, Tourism and Leisure*, *6*(2).

Torres Fragoso, J., & Luna Espinoza, I. (2017). Assessment of banking service quality perception using the SERVPERF model. *Contaduría y Administración*, *62*(4), 1294–1316. https://doi.org/10.1016/j.cya.2017.06.011

APPENDIX 1

Addis Ababa University

College of Business and Economies Department of Management

MSc Business Administration

Questioner (English)

Dear Respondents

I am currently a student at Addis Ababa University and am doing my Master's thesis to identify the impact of the service quality of Ethiopian Commodity Exchange (ECX) on Customer loyalty and customer satisfaction as a mediating variable. So you are kindly requested to provide accurate, complete and reliable information to the best of your knowledge. Feel free to discuss any topic related issue since the data will use for this specific research only I assure you that all the information will kept confidential.

Section A: Demographic information

Please provide your response by putting √ mark in the space provided

1. Gender: Male ☐ Female ☐

2. Age: 18-25 year ☐ 26-35 year ☐ 36-45 year ☐ Over 45 year ☐

3. Education: less than 12th Grade ☐ Diploma ☐ Degree ☐ 2nd Degree or Above ☐

4. Membership type: Member ☐ Non-Member/direct trader ☐

5. Please indicate your trade type at ECX: Exporter ☐ Supplier ☐

6. How long have you been in the sector: Less than 4 years ☐ between 4 - 8years ☐ between 8-10 years ☐ above 10 years? ☐

7. How long have you been working with ECX? Less than 4 years ☐ between 4-8 years ☐ between 8-10 years ☐ above 10 years ☐

Section B: Service quality of ECX

	Tangibles	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
	ECX trading platform has modern-looking technology and equipment.					
	ECX's warehouses are visually appealing.					
	ECX employees are well dressed and appear professional.					
	The overall physical setup of ECX, including offices and warehouses, meets industry standards.					
	Reliability	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
	When ECX promises to execute a trade or process transactions within ascertain time, it does so.					
	When I face issues with grading, warehousing, or trading, ECX shows sincere interest in solving them.					
	ECX ensures accurate grading and standardization of coffees.					
	ECX provides its trading services at the time it promises.					
	ECX maintains error free records in its trading platform.					
	Responsiveness	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
	ECX keeps customers informed about warehouse storage status, grading results, and trading timelines.					
	ECX employees provide prompt assistance in trading, warehousing, and compliance-related inquiries.					
	ECX employees are always willing t help with grading, standardization, and trading issues.					
	ECX employees are never too busy to respond to my requests regarding trading, warehouse access, or regulation compliance.					
	Assurance	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
	The behaviors of ECX employees instill confidence in me.					
	I feel safe conducting transactions through ECX due to its compliance with regulations and secure trading platform.					
	ECX employees are consistently courteous to me.					
	ECX employees have the knowledge to answer my questions about trading, grading, standardization, and					

	compliance requirements.					
	Empathy	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
	ECX provides individual attention when I need support with trading.					
	ECX has employees who offer personalized support related to grading, standardization, and storage services.					
	ECX has my best interest at heart by ensuring fair trading practices and transparent commodity grading.					
	ECX employees understand my specific trading needs.					
	ECX's trading and warehouse operating hours are convenient for all customers.					

Section C: Customer Satisfaction

	Customer Satisfaction	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
	Based on my experience with ECX's trading, grading, warehousing, market information, and clearing services, I am very satisfied.					
	My choice to trade through ECX was wise one.					
	Overall ,I am satisfied with my decision to use ECX for trading services.					
	I believe I made the right choice in trading through ECX due to its reliable platform and standardized processes.					
	My overall evaluation of ECX's services, including trading, warehousing, grading, market information, and clearing, is very good.					

End of Questionnaire