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Addis Ababa University

School of Commerce

Department of Marketing Management

**The Mediating Effect of Customer Satisfaction on the Relationship between Air
Freight Service Quality and Customer Loyalty:
In the Case of Ethiopian Cargo and Logistics Services**

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Addis Ababa, Ethiopia

June: 2024

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Freight Services Quality and Customer Loyalty:
In the Case of Ethiopian Cargo and Logistics services**

**Addis Ababa University
School of Commerce
Department of Marketing Management**

**A Thesis Submitted to the School of Graduate Studies of Addis Ababa
University School of Commerce in Partial Fulfillment for the Award of
Master of Arts degree in Marketing Management**

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June: 2024

DECLARATIONS

I, Ephrem Tadele, hereby declare that this thesis titled, " The Mediating Effect of Customer Satisfaction on the Relationship between Air Freight Services Qualities and customer loyalty: In the Case of Ethiopian Cargo and Logistics Service” is my original work. I confirm that it has not been submitted, either in part or whole by any other person for an award of a degree in any other university/institution.

I conducted the research on my own, with the guidance and support of my research supervisor.

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Date of submission: June 2024

CERTIFICATION

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The undersigned certify that we have read and hereby recommended to the Addis Ababa University to accept the thesis submitted by Ephrem Tadele: entitled “The Mediating Effect of Customer Satisfaction on the Relationship between Air Freight Services Quality and Customer Loyalty: In the Case of Ethiopian Cargo and Logistics services”, in partial fulfillment of the requirements for the award of a Degree of Masters in Marketing Management.

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Thank you

List of Acronyms

ANOVA.....	Analysis of Variance
ECLS.....	Ethiopian cargo and logistics services
SPSS.....	Statistical Package for Social Sciences
BASA.....	Bilateral Air Services agreement)
SAATM	Single African Air Transport market
AfCFTA	The Africa Continental Free Trade Area
CTK.....	Cargo Tonne kilometers
IATA.....	International Air Transportation Association
CS	customer satisfaction
CL.....	customer loyalty
SQ	Services Quality

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ABSTRACT

This study investigates the mediating effect of customer satisfaction in the relationship between air freight service quality and customer loyalty in Ethiopian cargo and logistics services. The importance of this study is to fill the knowledge gap for academicians might fill the literature gap by referring to the major findings of this study and raising awareness of ECLS regarding the relationship between service quality, customer satisfaction, and customer loyalty. This study sampled 212 respondents of ECLS who are registered as shipper customers. Out of the 212 questionnaires, 202 (95%) were completed and returned. This study used both stratified and convenience sampling methods. To collect data from the respondents, a close-ended questionnaire with five-point Likert scales was applied. The researcher used quantitative data, which was coded and analyzed using SPSS 26 statistical software. Mediation analysis is also carried out using Hayes process macro model 4. The developed model aimed to measure customer loyalty by implementing service quality in the air freight services through customer satisfaction as a mediator in Ethiopian cargo and Logistics and Services. According to the study's findings ($b=0.7163$, $p = 0.000$), the service quality multi-regression coefficient result had a positive and significant impact on customer loyalty. Customer satisfaction is positively and significantly impacted by services quality ($b=1.2380$, $p = 0.000$). Similarly, customer satisfaction significantly and positively influences customer loyalty ($b=0.3229$, $p = 0.000$), finally, The indirect effect of service quality on customer loyalty through customer satisfaction is ($b 0.3998$ $p < 0.001$). Bootstrap Confidence Intervals (BootLLCI and BootULCI): The 95% bootstrap confidence interval for the indirect effect ranges from 0.1721 to 0.6181. Since the indirect effect is statistically significant, we can conclude that there is a mediation effect. The result of this study on customer satisfaction supports the partial mediation of the relationship between service quality and Customer loyalty. The research implies that the company can prioritize delivering high-quality services which is likely to improve higher levels of customer satisfaction and loyalty. Service quality increases customer loyalty, which is indirectly influenced by customer satisfaction. Therefore, it is essential for Ethiopian cargo and logistics services to implement a service quality strategy and loyalty programs to maintain satisfied and loyal customers.

Key Words: *service quality; Customer satisfaction; Customer loyalty, Ethiopian cargo and logistics services, and mediation.*

Chapter One

1. Introduction

1.1 Background of the study

The Air Freight and logistics industry has grown in significance within the world's global economy. USD 138 billion goods worth were delivered by aircraft in 2023 (IATA, 2024). In many ways, air freight of high-value-to-weight goods has emerged as a vital connection in international trade, since prompt delivery and speed are valued more and more. Despite making up less than 1% of all shipments globally in terms of volume, air freight shipments currently account for 35% of all shipments globally in terms of value (Shepherd et al., 2016). Air freight is the ideal method of transportation for commodities such as electronics, medicines, perishables, and other things when time is of the essence due to its efficiency and speed.

Ethiopian Cargo and Logistics Services, one of the main strategic business units within Ethiopian airline group that is involved in air freight transport. Ethiopian Cargo and Logistics Services traces its roots back to the early days of Ethiopian Airlines, which was established in 1945. The airline's first cargo charter operation took place in 1946, marking the beginning of its foray into the air freight industry. Over the years, Ethiopian Cargo & Logistics Services has played a crucial role in supporting Ethiopia's growing economy by facilitating the transportation of goods and products to international markets. Currently, ECLS has 10 - Boeing 777-200F, 2- Boeing 767-300F and 4 - Boeing 737-800F dedicated freighters and 130+ passenger aircraft, serving 68 cargo dedicated and 135+ passenger destinations in Africa, Middle East, Asia, Europe and the Americas with an average daily uplift of over 2000 tons of which over 611 tons is transported in a belly hold capacity. Ethiopian cargo positioning itself as a competitor and leader, by concentrating on customer needs, is one of the Strategy Plans for Ethiopia's cargo and logistics service.

Due to its profound influence on organizational performance metrics such as customer satisfaction, loyalty, and profitability, service quality has become the focus of academic and practical examination. The quality of service has been conceptualized by scholars such as Gronroos (1984) and Parasuraman et al. (1988) as an evaluation process based on perceived versus expected service delivery, generally defined as the alignment of provided services with customer expectations.

Technologies like SERVQUAL have evolved to delineate service quality dimensions, including tangibility, reliability, assurance, responsiveness, and empathy, reflecting the intricate nature of customer service evaluations. In particular, there has been a marked increase in efforts to conceptualize and manage the quality of services, which has been shown to be of paramount importance in the service sector, especially in the hospitality sector, where significant revenue potential intersects with global economic interests (Liat et al., 2017).

Customer satisfaction is an essential component of company performance, it represents the level of satisfaction that clients have with the services they get; this is frequently determined via surveys and ratings in order to meet their changing demands (Machirori et al., 2011). The main objective is the same across different sectors, namely industrial enterprises, public authorities, service companies, and nonprofits to ensure customer satisfaction (Broetzmann 1995) Customer satisfaction, which has been extensively discussed in the literature, encompasses physical, psychological, and normative dimensions, highlighting its multifaceted nature (Javadin et al., 2012). Although closely linked to service quality, customer happiness is a more expansive notion, as demonstrated by its noteworthy influence on both organizational performance and competitiveness in the market (Forsythe, 2012). Customer satisfaction, which is acknowledged as a process as well as an end, is becoming more and more understood as a strategic imperative. This has led to attempts to continuously enhance quality and calls for an organizational strategy that is customer-centric (Grigoroudis et al., 2010). Organizations recognize that maintaining profitability and protecting market share requires maintaining customer satisfaction, which is why they work to improve it through Total Quality Management (TQM) and customer feedback channels (Siskos, 2010).

There is a major focus on behavioral aspects, examining metrics like repeat purchases, share of wallet, and purchase frequency when it comes to customer loyalty. However, this overlooks the complex nature of loyalty according to Oliver(1999) who defined customer loyalty as a consistent preference for a product or service despite situational influences. While the traditional definition focuses on repurchase behavior, a more holistic understanding is necessary and considers factors like brand advocacy and long-term patronage. And the pivotal role that customer loyalty plays in driving organizational success have been emphasized by various scholars (Anderson, Fornell, & Lehmann, 1994; Osmonbekov, Czaplewski, 2006; So, King, Sparks, & Wang, 2016; Akpi, Vem,

& Eshue, 2020),), and its link to trust, satisfaction, ICT, and corporate image. According to (Upamannyu et al., 2015; Hwang & Maltila, 2018) maintaining customer loyalty is crucial for businesses as it is also cost-effective and forms the bedrock of enduring relationships and marketing strategies.

The importance of service quality, customer satisfaction, and customer loyalty are replete needs for organizations to understand them have become imperative for sustainable competitive advantage due to the surging competition in the business environment. In support of this, Chingang Nde et al. (2010) intimated that service quality and customer satisfaction has become important concepts which organization need to understand in order to remain competitive in business. Service quality is thus seen as an essential sign of customer satisfaction which in turn induces customer loyalty. According to Mcdogall & Levesque (2000) and Negi (2009), service quality leads to satisfaction which is a potential tool to influence customer loyalty in the long run. A study conducted by Mahamad & Ramayah (2010) showed a positive and meaningful relationship among all the service quality dimensions with satisfaction and loyalty.

The success of every business includes a multitude of approaches, including customer service (Sandhu et al., 2013). The air freight industry plays a crucial role in the global economy by facilitating the transportation of goods across borders. In this case, understanding the factors that influence service quality, customer satisfaction and customer loyalty in the air freight sector is essential for firms to maintain, make informed decisions, improve service quality, retain customers a competitive advantage, and sustain business operations. This study contributes to the existing works on the relationship between air freight services quality, customer satisfaction, and customer loyalty and has provided practical recommendations for Ethiopian cargo and logistics services to improve their service quality, enhance customer satisfaction, and foster long-term customer loyalty. In addition, government policymakers can use the findings of the study to form regulations and policies that promote customer satisfaction and loyalty in airfreight. This research investigates the mediating effect of customer satisfaction on the relationship between Air freight service qualities and customer loyalty: in the case of Ethiopian cargo and logistics services. The data obtained from the questionnaire survey from Ethiopian air cargo and logistics services customers has been analyzed using SPSS (Statistical Package for Social Science) version 26. For this research, the five dimensions of Service Quality were based on the SERVQUAL model

(Parasuraman et al.,1988). Services quality was taken as the independent variable while customer Satisfaction as the mediating variable, and Customer Loyalty as the dependent variable.

1.2 Statement of the problem

The Airfreight industry particularly the Ethiopian airfreight industry is expected to become more competitive. Currently, Ethiopian cargo and logistics services shared the line share of traffic and capacity out of Addis Ababa, Ethiopia market. But going forward as Ethiopian cargo expands in other countries even based on 5th freedom traffic right then other Airlines based in foreign countries are expected to request the same privilege from Ethiopia. This time Countries are strongly negotiating in BASA(bilateral Air Services agreement) to get more traffic right access. AU flagship projects, The Single African Air Transport market (SAATM) and The Africa Continental Free Trade Area (AfCFTA) are expected to liberalize the Africa air space and trade. Therefore, with all of these development, the air cargo business environment in the world particularly in Ethiopia is expected be competitive and where the competition is stiff, sustaining services quality, customer satisfaction and loyalty is the main determinant.

Customer satisfaction can lead to customer loyalty because people tend to be rational and risk-adverse so that they might have a tendency to reduce risk and stay with the service providers which they already had good experience with. Actually, customer satisfaction has been suggested to be an antecedent of loyalty in service context in previous studies (Belas & Gabcova, 2016; Coelho & Henseler, 2012; Lam, Shankar, Erramilli, & Murthy, 2004; Mittal & Kamakura, 2001). There are also many type of relationship between customer satisfaction and customer loyalty suggested such as satisfaction is the core of loyalty, satisfaction is one of the necessary components of loyalty, satisfaction and loyalty are the components of ultimate loyalty and satisfaction as the starting point of loyalty (Munari, Ielasi & Bjetta, 2013). In addition, the relationship between customer satisfaction and customer loyalty might be nonlinear. Heskett et al. (2008) suggested that customer loyalty should improve dramatically when customer satisfaction overcomes a certain level. In sum, the dominant proposition is that satisfaction is an essential necessary part to achieve customer loyalty. In addition, as it presented here in early part, service quality is assumed to be an antecedent of customer satisfaction. Therefore, it can be interesting to test the relationship between service quality and customer loyalty with customer satisfaction as the mediator of this relationship. In this stream of research, most of the studies confirm that there is a positive relationship between service

quality and customer loyalty and customer satisfaction is usually the mediator between them (Chodzaza & Gombachika, 2013; Chu et al., 2012).

Several empirical studies were conducted to establish the mediation role of customer satisfaction between service quality and customer loyalty across various service sectors such as banks, hospitals, hotels, and telecommunication. However, there is a lack of research in the air freight industry, particularly within the context of Ethiopian Cargo and Logistics Services. In this context, the study serves as a vital tool in closing the existing knowledge gap and It helps Ethiopian cargo and logistics services and other stakeholders to make informed decisions, improve service quality, retain customers, gain a competitive edge, and effectively navigate the challenges of the air freight industry. The main purpose of this study is to investigate the mediation effect of customer satisfaction in the relationship between air freight Service Quality, and Customer Loyalty in the case of Ethiopian cargo and logistics services.

1.3 Research question

The researcher investigates the mediating effect of the customer satisfaction relationship between air freight service quality and customer loyalty in ECLS. The research questions are as follows:

1. What is the effect of service quality on customer loyalty in ECLS?
2. What is the effect of service quality on customer satisfaction in ECLS?
3. What is the effect of customer satisfaction on customer loyalty in ECLS?
4. Does customer satisfaction mediate the relationship between service quality and customer loyalty in ECLS?

1.4. Objective of the study

1.4.1 General objectives

The major objective of this research is to determine the mediating effect of the customer satisfaction relationship between air freight service quality and customer loyalty in Ethiopian cargo and logistics services.

1.4.2 Specific objectives

- To assess the effect of service quality on customer loyalty in the case of Ethiopian Cargo and logistic services.
- To evaluate the effect of service quality on Customer satisfaction in the case of Ethiopian Cargo and logistic services.
- To assess the effect of customer satisfaction on customer loyalty in the case of Ethiopian Cargo and logistic services.
- To investigate whether customer satisfaction mediates the relationship between Service quality and customer loyalty in the case of Ethiopian Cargo and logistic services.

1.5 Definition of Terms

Customer loyalty: Customer Loyalty is more aimed at non-random behavior shown by the purchase routine. Behavior or non-random events that is if customers know the benefits of certain goods or services and in accordance with the requirements, then the customer will tend to be loyal (Griffin, 1995).

Customer satisfaction: Customer satisfaction is conceptualized as being transaction-specific value focused on the experience of the customer on a particular service encounter (Cronin & Taylor, 1992).

Service -Zeithaml and Bitner (2003), definition of services describes that services are needs, processes, and performances. Kotler and Keller (2012) defined Service from another perspective as is any act or performance one party can offer to another that is essentially intangible and does not result in the ownership of anything.

Quality-Juran (1988) defined quality as “fitness for intended use” which basically focuses quality is about meeting or exceeding customer expectations. When we come to the service sector, keeping consistent quality is a huge task to companies due to the nature and characteristics of service which is highly reliant on the performer.

Service quality -Service quality is defined as how well the service meets or exceeds the customers’ expectations on a consistent basis (Crosby, 1979; Parasuraman, Zeithaml & Berry, 1985). Due to

the high need to match customers' expectations, service firms have identified quality as a driving force in the success of their firm and in developing a sustainable competitive advantage (Lesle and Sheth, 1991).

1.6 Significance of the Study

This study contributed to the existing literature on mediating the effect of customer satisfaction on the relationship between air freight service quality and customer loyalty. It provided insights on Ethiopian Cargo and logistics service management to identify major areas for improvement in their service delivery processes and develop strategies that focus on enhancing customer satisfaction, which in turn can lead to increased customer loyalty and repeat business. By recognizing the importance of customer satisfaction as a mediator, managers can prioritize efforts to ensure consistent and high-quality service delivery, ultimately leading to improved customer loyalty and profitability. In addition, government policy makers can use the findings of the study to inform regulations and policies that promote customer satisfaction and loyalty in the airfreight industry and Ethiopian cargo logistics services. Policymakers can develop initiatives that encourage airfreight companies to prioritize service quality and customer experience, ultimately benefiting both customers and the industry.

1.7 Scope of the Study

The research focused on Ethiopian cargo and logistics services on shippers' customers. In order to limit the scope of the study the research focused on Addis Ababa Ethiopian cargo & logistics head office Terminal. Information was gathered from freight forwarders or shippers of the Ethiopian cargo and logistics services. Even though, Ethiopian cargo provides outbound and inbound shipment transport services for customers; due to time and financial constraints, the study did not undertake inbound services.

The theoretical scope of the study was based upon existing literature and theoretical frameworks related to service quality, customer satisfaction, and customer loyalty in the context of the airfreight industry. The research was guided by theories such as the SERVQUAL model, which assesses overall service quality based on dimensions like reliability, responsiveness, assurance, empathy, and tangibles.

1.8. Limitations of the study

Even if the results and findings of the study were valuable, its limitations must be given due consideration. One potential limitation of the study was that it was not strong that it could not generalize to the whole Ethiopian cargo and logistics services users worldwide. Due to its scope limitation i.e., it was only restricted to Head office, Addis Ababa. The second limitation of this study was the limited number of service quality dimensions that could affect the mediating customer satisfaction and customer loyalty that was used. Customer satisfaction could be affected by so many factors beside the factors used in the study. The unavailability of abundant research in Ethiopia especially air freight service on the mediating effect of the customer satisfaction relationship between service quality and customer loyalty limited the empirical review of the study.

It is also well recognized that the limitations and drawbacks associated to the research design (purely quantitative), the research instrument used (Since the study only used survey questionnaire to collect data, there was limited the room for opinions of the study respondents), the sampling technique, statistical analysis methods employed do have an effect on the overall research process and thus on the results and conclusions.

1.9 Organization of the Study

This study will have five chapters. The first chapter provides an introduction to customer satisfaction, service quality, and customer loyalty on air freight services. It will outline the research background, statement of the problem, research objectives, research questions, significance of the study, and scope of the study. The relevant literature and empirical review, theoretical review, and conceptual framework will be reviewed in Chapter Two. Research methodology, research approach, target population, sampling technique, method of data collection, instruments and procedures, data analysis method, model specification, validity and reliability test and the ethical considerations will be discussed in chapter three. The study's results and findings will be presented in Chapter Four, along with the interpretation and discussion of the data. Chapter Five will close with a summary of the results, conclusions, implications, and recommendations, a discussion of the paper's limitations, and a list of future study topics.

.Chapter Two

2. Literature review

2.1 introduction

This chapter is to provide a comprehensive overview of research subjects by studying into relevant literature. This review will cover discussion on the service quality construct and its determinants, models for measuring service quality, and the relationship between service quality, customer satisfaction, and customer loyalty. Critical theories and arguments in the literature have been identified from service quality, customer satisfaction, customer loyalty, and Air freight/Cargo literature.

2.2 Service Quality

Quality is defined quality as suitability for intended use which focuses quality is about meeting or exceeding customer expectations (Juran,1988). When we come to the service sector, keeping consistent quality is a huge task for companies due to the nature and characteristics of service which is highly reliant on the performer. According to Zeithaml and Bitner (2003), the definition of services describes that services are needs, processes, and performances. defined Service from another perspective as any act or performance one party can offer to another that is essentially intangible and does not result in the ownership of anything (Kotler and Keller,2012).

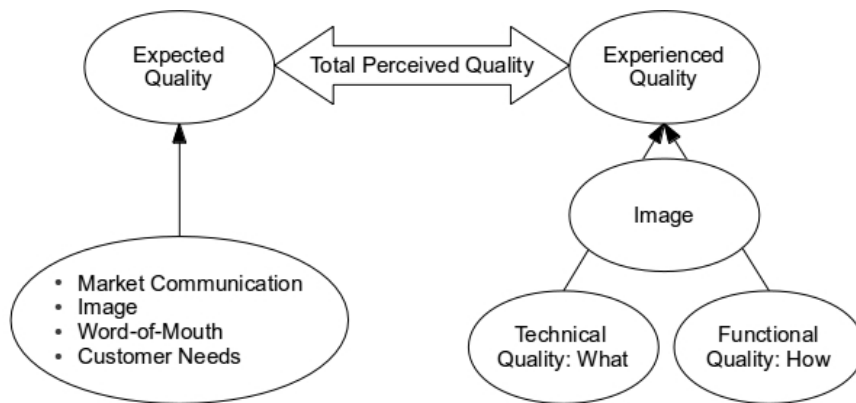
Service Quality is founded on a comparison between what the customer feels should be offered and what is provided (Parasuraman, Zeithaml, and Berry, 1985). Quality of service delivered is an internal concept measured by comparing what is delivered with the standards set. Parasuraman et al. (1985), in developing the service quality model, defined service quality as the gap between the expected service and perceived performance. Quality evaluations are however not made solely on the outcomes of a service; they also include the evaluation of the process of service delivery. All engagement between a customer and a service provider in the airfreight services industry is the real moment, just as in other segments of the hospitality business. It is considerably harder to create a service that will satisfy every customer's expectation when considering using air freight or air cargo services. The notion that service quality is a function of expectations, performance, and gaps has led to the development of several models for its

assessment. The major services quality measurement models will be presented as follows:

2,2,1 Gronroos Quality Model

Gronroos (1984) found that two fundamental dimensions have an impact on the experienced service and the derived customer's perceived service quality. These three dimensions are the technical quality dimension, functional quality image dimension as follows:

Figure 2.1: Technical and functional (*Gronroos' Quality Model*)



- **Technical quality** is what the customer actually receives from the total service as a result of the process and is further known as the outcome dimension. Services are designed to produce a somehow tangible outcome and therefore customers can think of the quality of services varying according to the outcome received (Gronroos, 1990). In the air freight/cargo industry the technical quality dimension would be the flight from one origin to destination. Frequently, this measurement can be measured rather objectively by customers because of its nature, being a technical solution to a problem.
- **Functional quality** is how the customer receives the service, and it concerns the process of delivering the service. The process delivery is conceived of as the moment of truth because it encompasses the pivotal moment in the service experience where the business is truly exposed to the customer through different levels of customer interaction, e.g. human-to-human interaction or technology-to-human interaction (Svenson, 2006). These personal or non-personal interactions will evidently affect the customers' evaluation of the perceived

service quality. Thus, the assessment pertains to the psychological caliber of work and maybe predicated on the conduct of the organization's staff, their qualifications, or the availability of the individuals required for the procedure.

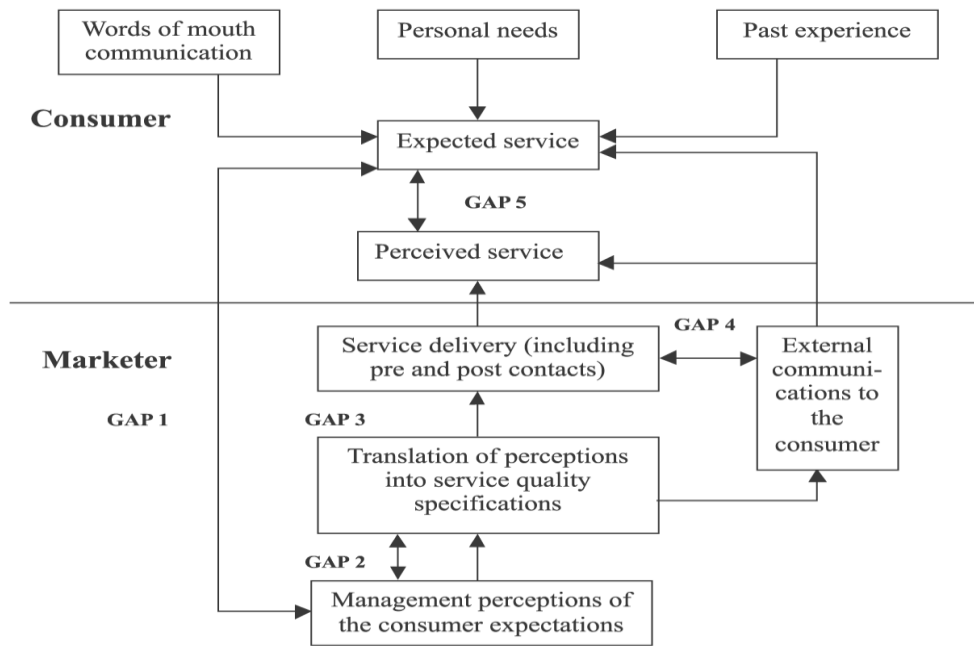
- **Image** is very important to services companies. The image functions as a filter for the technical and functional quality. For instance, if the customer is often disappointed with the condition of his cargo shipment, the customer's image of the airline company will decline. The customers draw their expectations from the image, market communication, word of mouth, and their needs (Gummesson & Grönroos, 1987).

2.2.2 Service Quality Model

Zeithaml et al. (1990) presented a generic model and measurement system for perceived service quality, which is the SERVQUAL model. The model prior to SERVQUAL is "the gap model" by the same authors. The gap model presents 5 different gaps which a company should avoid. Gap 5, known as the customer gap, represents the specific construct measured upon in the SERVQUAL model. Parasuraman and colleagues found that regardless of the types of service, consumers use basically similar criteria in evaluating service quality. They recognized the idea that service quality is a function of expectations, performance and the gaps, and conducted a broad-based exploratory study. They developed and refined the SERVQUAL, a multiple item instrument to quantify customer's global assessment (as opposed to transaction-specific) assessment of a company's service quality. Their scale involved expectation-perception gap scored along five dimensions of reliability, responsiveness, assurance, empathy, and tangibles (Parasuraman et al., 1985).

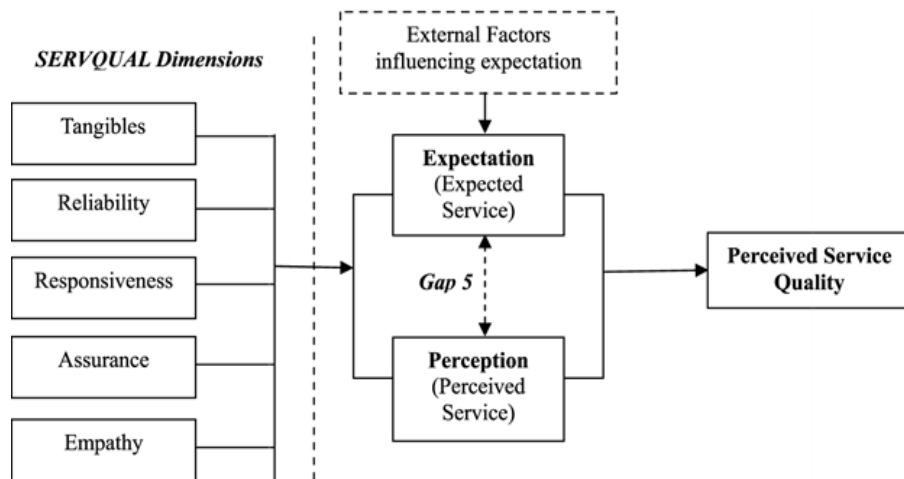
This exploratory research was refined with their subsequent scale named SERVQUAL for measuring customers' perceptions of service quality. (Parasuraman et al., 1988). At this point the original ten dimensions of service quality collapsed in to five dimensions: reliability, responsiveness, tangibles, assurance (communication, competence, credibility, courtesy, and security) and empathy which capture access and understanding/knowing the customers.

Figure 2.2 Gap analysis model



Sources: Parasuraman et al., (1985)

Figure 2.3 SERVQUAL Model



2.2.3 SERVQUAL Dimension

Tangibles: the appearance of physical facilities, equipment, personnel, and communication materials in the service process, such as cleanliness, the appearance of staff, and appropriate technical equipment for support. In airfreight services, this may include the export and import of physical documents, equipment, cargo aircraft, and airline employees.

Reliability: This refers to the ability to perform the promised service dependably and accurately. For example, consistency in meeting promises and the completion of tasks on time. This ranges from adherence to the published schedules to compliance with defined standard operating procedures. Also, in airfreight service on Time delivery, consistency, and transparency is mandatory.

Responsiveness: general willingness to help customers and provide prompt service, which refers to the ability to respond to individual customer requirements and show sincere interest in problem-solving. In airfreight services, this includes communication, flexibility, and problem-solving.

Assurance: includes the competence and courtesy of employees and their ability to convey trust and credibility. The dimension would include staff training in competent and courteous charisma among employees and a feeling of safety in transactions with customers. For air cargo service, there could be safety standards, truck records, and insurance coverage.

Empathy encompasses access to customers, communication with customers, and understanding of customers, resulting in individualized attention to customers. This is considered a very important element in the in-flight service process and covers the level of individual and personal attention and the understanding of specific customer needs. In airfreight services, this may include understanding customer needs in advance, managing customer expectations, and providing proactive support for customers.

2.2.4 Performances model

According to Cronin and Taylor (1992), they investigated the conceptualization and measurement of service quality and its relationship with consumer satisfaction and purchase intentions. They compared computed difference scores with perceptions to conclude that perceptions alone are better predictors of service quality. They argued on the framework of Parasuraman et al. (1985) concerning the conceptualization and measurement of service quality and developed a performance-only measurement of service quality called SERVPERF by illustrating that service quality is a form of consumer attitude and the performance-only measure of service quality is an enhanced means of measuring service quality. They argued that SERVQUAL confounds satisfaction and attitude. They stated that service quality can be conceptualized as “similar to an attitude” and can be operationalized by the adequacy-importance model. They maintained that performance, instead of “performance expectations,” determines service quality.

In this study, the researcher evaluated service quality using the SERVQUAL model. The SERVQUAL model has been used in several research as a superior and more useful model. By determining the discrepancies between customer expectations and their perception of the service's actual performance. The five service quality dimensions serve as the foundation for SERVQUAL (Parssuraman et al,1988). This study measures the quality of service based on the performance of service scores perceived by clients (Cronin & Taylor, 1992).

2.3 Customer Loyalty

Customer loyalty is defined as the fact that customers constantly buy the product or service they buy from a certain business or brand, and do not look for another brand or business when they think about purchasing again (Aktepe et al., 2009). According to Koc (2002), the concept of loyalty means 'sincere and solid friendship, sincere loyalty, solidity in feelings and emotions, not betraying, conformity to the truth'. The fact that customers continue to exchange with the business, spend time on it, or intend to say positive things about the business is a sign of loyalty. Shankar et al. (2003) defined loyalty as the commitment a customer makes to a particular brand, website, or online service provider when alternative options are available. Customer loyalty is a psychological relationship that customers establish with the business, not just buying products or services again. When the customer is loyal, it integrates with the business and completely belongs to the business (Smith, 1996). In the early 1980s, the importance of customer loyalty began to be understood thanks to regular flight schedules. Until these years, businesses have prepared customer loyalty creation forms for customers, tested them, and applied them to customers. The purpose of this whole process is based on keeping customers connected to the business for a longer period, and as a result, increasing sales and profits (Duffy, 2005). Nowadays, customers are more knowledgeable, more investigative, and more protective of their rights. The fact that customers began to display a more selective or more willing image when choosing a product or service allowed them to become price-conscious. In such an environment, the trust and loyalty of the customer to the brand are extremely important. In an increasingly competitive environment, businesses have to be customer-oriented (Gronstedt, 2002). For a business to have a long life and to make a profit, it must have a loyal customer portfolio (Dekimpe et al., 1997). The fact that the customer regularly makes frequent purchases from the same business is stated as the first stage of customer loyalty. Customers who have real loyalty to the business, on the other hand, do not give up making their purchases from the business to which they are connected, even if their conditions are not favorable or if competing businesses have better offers (Altıntaş, 2000). According to Rundle-Thiele and Mackay (2001), loyal customers show more intense interest in businesses and, as a result, they become attached to the business. Loyal customers of the business do not accept the offers of other businesses, even if they are more suitable, and they are willing to pay more fees to their businesses. In markets where competition is very intense, businesses want almost all of their customers to be

fan customers as much as possible. The main reason for this is that there are businesses that can substitute the same product or service in the market. The dynamic nature of market conditions has encouraged businesses to take care of their customers rather than to gain customers. Lifelong customer relationships and valuing their customers have become mandatory for businesses. They have to spend 5 times more energy, time, and money than normal to regain a lost customer. Despite all these costs, businesses cannot regain 68% of their lost customers (Uyar, 2018). It seems to be possible for businesses to increase their revenues by 85% by increasing their existing customer loyalty by 5%. It is an 85% probability that the customers who are not satisfied and about to give up on the business can be regained at the right time and with the right intervention (Taspınar, 2005). When businesses try to acquire new customers instead of focusing on the current customer, they have to incur more costs. Realizing this, businesses have begun to value their existing customers more and develop new strategies to make them loyal customers. Desiring the best for the customer and satisfying them is the basis of creating loyal customers. Loyal customers will not accept the attractive offers of competitor companies, they will defend their business under all circumstances and will contribute to the economic value for the business (Hackl and Westlund, 2000).

Customer Loyalty Approaches; are examined in three categories as behavioral, attitudinal, and combined. Firstly, behavioral loyalty; can be explained with sub-headings such as the customer's intention to repeat the purchase from the same business for shopping, then to express his satisfaction to other people and to pay more to the business for shopping (Ha and Jang, 2010). Behavioral loyalty: is related to the consistency of the customer and includes the behavior of repurchasing a product or service from the same business, how often he buys it, and the repetition of his behavior (Giray and Giriskan, 2015). This loyalty approach is not limited to business transactions only and beyond that, it covers customer behavior revealed by motivational factors (Doorn et al., 2010). The missing aspect of this dimension is the misconception that every purchase will provide loyalty to the brand. A customer whose expectations are not met may tend to shift to another business at the point where the business finds an alternative to its products (Batmaz, 2008). In the behavioral loyalty approach, loyalty is determined by behavioral movements. Therefore, what is important in this approach is that the customer repeats the purchase and maintains his intention to purchase in the future (Altıntaş, 2000). Secondly, the attitudinal loyalty approach

reveals the true feelings of customers and focuses on exactly how they see the business rather than why they buy a product or service (Gounaris and Stathapoulos, 2004) This approach can be defined as the customer's psychological commitment to the business. The reason for this is that he is willing to recommend the business to someone else even if he does not make any purchases (Bowen and Chen, 2001). Businesses with more customers with attitudinal loyalty can sell at higher prices and gain larger market shares (Ayas, 2012). In contrast to the behavioral loyalty approach, the attitudinal loyalty approach goes further than the behavioral loyalty approach and expresses the strength of the customer's emotional closeness to the business (Mechinda et al., 2009). While behavioral loyalty is determined in part by situational factors (such as the availability of a brand), attitudinal loyalty is more persistent (Caceres and Papparoidamis, 2007). Finally, the unified loyalty approach emerges by combining the behavioral and attitudinal loyalty approaches; is explained depending on the frequency and rate of shopping according to the customer's product, service, or brand preference (Bowen and Chen, 2001). The combined loyalty approach is also referred to as the mixed loyalty approach in many sources. The most important point in the unified loyalty approach; is to eliminate this confusion by determining whether the repetition of the purchasing behavior specified in the behavioral approach is due to loyalty or any obstacle or habit-based behavior (Baykal and Ayyıldız, 2020). According to, the mixed definition put forward by Jacoby and Kyner (1973) through combining attitudinal and behavioral approaches, loyalty "is a behavioral result developed by a decision-making unit against one or more brands among the existing brands, as a function of psychological processes and revealed consciously, without relying on chance, for a certain period"

2.4 Customers satisfaction

Customer satisfaction, as noted by Tahir, Waggett and Hoffman (2013), is “a customer's perspective based on expectation and then subsequent post purchase experience”. In other words, it is an evaluation of products or services“ quality level that meets or exceeds the customer expectations. The term customer satisfaction has been on the market for a long time. Many researchers and academicians emphasized that it is a key element for a company’s success in the market as well as a crucial factor for company survival as it has a positive effect on a company’s profitability. (Novikova, 2009; Angelova and Zekiri, 2011) It cannot be denied that a satisfied consumer tends to buy more than a less satisfied one. In a highly competitive market, customer

satisfaction is, indeed, a crucial key that builds strong and long-term relationships between the customers and the firm. The measure of customer satisfaction, therefore, has become a vital concern for many companies and services providers to achieve such success. (Mohammad, 2012) Customer satisfaction is thought to be a precursor to behavioral intentions.

Scholars have produced impressive evidence of the favorable effects of customer satisfaction on various behavioral intention indicators, such as repeat purchase (Szymanski and Henard, 2001), retention (Bolton, 1998), willingness to recommend to others (Homburg et al., 2005), loyalty (Anderson and Sullivan, 1993), and profitability (Anderson et al., 1994; Bernhardt et al., 2000). Equally impressive results have also been found in healthcare research. Satisfied patients are more likely to comply with medical treatment regimens (Williams, 1994; Ahorny and Strasser, 1993) heal faster (Kincey et al., 1975) and are more likely to utilize services in the future (Baker, 1990). It is therefore an important business success strategy (Anderson et al., 2004; Yoon and Uysal, 2005). Satisfaction is considered to be a global evaluation of a consumer's experience with a product or service offering. Global evaluations of service experiences has been described as a cognitive evaluation of the sum total of satisfactions with the individual elements or attributes of all the products and services that make up the experience (Tse and Wilton, 1988; Pizam and Ellis, 1999).

Oliver (1980) described satisfaction as a cognitive state resulting from cognitive evaluations between expectations and perceived performance. One of the most important goals of any organization is retaining and satisfying current and past customers (Pizam & Ellis 1999, 326-339). If environmentally friendly products need to be considered or purchased by the customers then they have to perform satisfactorily compared to conventional products and achieve consumer satisfaction on key attributes such as functional performance, quality and price (Ottman 1995, 29; Schlegelmilch et al. 1996, 35-56; Wong, Turner & Stoneman 1996, 263- 281.; Roy 1999). Customers purchase goods and services with prepurchase expectations about anticipated performance (Oliver 1980, 460-469). There is an increasing tendency to view satisfying customer as going beyond providing just a technically superior product or service, i.e., defect reduction and continuous improvement programs. Quality is also as such defined by the customer's perception, not by the service provider.

Customer satisfaction is basically how happy the customers are with the services provided and

can be determined through surveys and ratings to understand their needs and make adjustments where relevant (Machirori et al., 2011). Industrial firms, government bodies, service companies, and nonprofit organizations all have one thing in common that is the main focus to satisfy the customers (Broetzmann, 1995). Customer satisfaction is studied and debated regularly in literature antecedents (Chidambaram, 2012). The considerations extend from physical to psychological and normative aspects (Javadin et al., 2012). There is no doubt that customer satisfaction and service quality are positively related constructs (Baker et al., 2000). Conversely, several studies confirmed that service quality is a determinant of customer satisfaction regardless of whether they were cumulative or transaction oriented (Cronin et al., 1992). The two dispute concepts are the ultimate goals of service providers (Awan et al., 2011). Nevertheless, it is important to note that customer satisfaction is a much wider concept not just based on specific dimensions (Wilson et al., 2008). Service quality is an evaluation over a long period hence is an antecedent component of customer satisfaction (Ree, 2010). Both developing and developed economies are affected by liberalization and globalization and the pressure of satisfaction is forcing organizations to adapt rapidly to maintain competitive advantage (Forsythe, 2012). To gain and protect market share in the long run, organizations must have strategies to ensure customer satisfaction (Tsoukatos, 2006). Research have shown that customer dissatisfaction and negative judgements had led to several destructive effects on profit (Munusamy, 2006). Some argued that satisfaction is the end product of perception (Karatepe et al., 2005).

A review of Yi in 1991 states that customer satisfaction may be defined either as a process or an outcome (Grigoroudis et al., 2010). The measurement of satisfaction has been explored by several theorists through Total Quality Management (TQM). It shows that quality improvement could not rely only on internal standards and metrics of the organizations but more on customer feedback. What is more, quality should be manifested in ways to be perceptible to the total number of customers (Siskos, 2010). Measuring satisfaction is beneficial because it improves continuous and systematic efforts to communicate with the total clientele.

Many factors affect customer satisfaction. According to Hokanson (1995), these factors include friendly employees, courteous employees, knowledgeable employees, helpful employees, accuracy of billing, billing timeliness, competitive pricing, service quality, good value, billing clarity, and quick service. These combine the two main subjects: service providers and service receivers. Customer satisfaction is generally viewed as a broad concept; however, service quality

focuses specifically on dimensions of service. Customer satisfaction is a subjective feeling always affected by many factors, and service quality is one element among those factors. Van Ree (2010) clarifies that service quality is a long-term overall evaluation, whereas customer satisfaction is a transaction-specific assessment. He argues that service quality is an antecedent to customer satisfaction. The two contentious constructs of “quality” and “satisfaction” tend to merge, especially in long-term relationships, into an overall concept of “relationship satisfaction” (Leverin and Liljander, 2006).

2.5 Service quality, Customer satisfaction and Customer loyalty

Service quality, customer satisfaction and customer loyalty Customer satisfaction and loyalty is becoming the vital objectives of business firms which looking for long-term relationship with customer. Customer satisfaction plays a major role in customer loyalty. Therefore, the business firms should focus on enhancing customer perceptions of service quality and satisfaction (Hua, Kandampully, & Juwaheer, 2009). In the context of airline sector, customer relationship is one of the vital business processes and customer satisfaction is becoming the key for success. Furthermore, the main element determining customer satisfaction is the customer’s perception of service quality (Koirala & Shrestha, 2012; Gyawali & Kunwar, 2014; Lamichhane, 2018). Customer satisfaction is described as the result of a comparison of the customers’ expectations and his or her subsequent perceived performance of service quality (Bhatta & Durgapal, 2016). Strong positive linkages have been apparent between service quality and customer satisfaction (Anderson & Sullivan, 1993). Customer satisfaction is widely recognized as a key influencing factor in the formation of consumers’ future purchase intentions (Taylor & Baker, 1994). High service quality and customer satisfaction often result in more repeat purchases and market share improvements (Buzzell & Gale, 1997). Customer satisfaction can play role of mediator that fill the gap between service quality and customer loyalty. The customers have a certain predicted product performance in mind prior to consumption. During consumption, customers understand the product or service performance or quality (Kotler & Keller, 2012). There was positive and significant relationship between customers' satisfaction and service quality in different services sectors such banks, telecom hotels, hospitals, and telecommunication, but limited research conducted in Ethiopia especially in the context of Ethiopian air cargo and logistics services.

2.6 Air Freight Industry

Air cargo was known as air freight in the aviation industry and is the mode of transport used to transport cargo quickly by air. Air freight is regarded as the most valuable form of transport when shipping or transporting goods in the fastest time worldwide. Air cargo can be transported through the same gateway as the passenger or commercial airlines. Any property carried or to be carried in an aircraft is regarded as air cargo. In addition, air freight, air express and airmail are comprised as Air cargo. General cargo and special cargo are defined as two types of air cargo. High value cargo like pharmaceuticals, jewelry, and electronics are regarded as general cargo. Although air shipping is more expensive than sea transport, it is still regarded as the best mode for transporting high margin and fragile goods. Special cargo preferred for transporting under special conditions like temperature control, air conditions, and special casing, especially for hazardous goods or livestock.

Before aircraft was conducted for transportation, mail was moved by balloons, dirigibles and carrier pigeons. On 7th November 1910, the first cargo moved by aircraft when transported a few bolts of silk by air from Dayton to Columbus, Ohio. The following year in 1911 experimentation with movement of post was started, and by 1914 regular air service began in the United States.

In the early 1970s door-to-door express package services came into being. In 1969, DHL was started by Dalsey, Hillblom and Lynn. In 1971, Federal Express was started by Fred Smith. The era of wide-bodied jets started in 1970 when the first Boeing 747 entered service.

In 2018, the operation of 1870 freighters were conducted worldwide. Thirty percent of these were large wide body (> 80 tons) aircraft, 33% were medium wide. Bodied aircraft (40 to 80 tons) and with 37% were standard bodies with carrying capacities of less than 45 tons. Boeing projects the demand for the world freighter fleet to increase to 3260 airplanes will be expected by 2037. Through new freighters and conversion of passenger airlines to cargo aircraft will meet the expected demand.

Benefits of Air Cargo in recent decades, the aviation industry has become the most effective means of transporting cargo in a safe and timely manner. Air cargo revolutionized the shipping industry,

vastly reducing shipping times for freight across the world compared to popular alternatives such as trucks and boats. As goods could be shipped more quickly, companies around the world suddenly had access to supplies that were once, because of time or price constraints, impossible for them to access. This allowed them to reduce prices and make their goods more accessible to the general population. Companies could boost profits by taking advantage of these competitive prices, allowing not only for cheaper consumer goods but also offering more opportunity to enter other lucrative industries. Another benefit of air freight is security. Air transportation is the safest mode of transport in the world, with accidents resulting in the loss of cargo happening far less than with transportation via road or sea. Airlines have secure handling measures in place to ensure staff or third parties do not interfere with cargo. In conjunction with technological advances in cargo handling such as freight tracking, air cargo provides a safe and secure mode of transport for goods and products.

2.7 Empirical review

There are a lot of empirical research conducted to establish the mediation effect that Customer Satisfaction plays in the relationship between Service quality and customer loyalty in different service sectors such as banks, hospitals, hotels, telecommunication, etc., but there are a few works related to the air freight industry. The topics and major findings are discussed below to give an insight into these studies. Also, the empirical evidence on the relationship between service quality, customer satisfaction, and customer loyalty indicates there is a positive significant relationship. Therefore, the study has developed the following hypothesis:

2.7.1 Service Quality and customer loyalty.

(Al-Rousan and Mohamed 2010) conducted a study entitled “Customer Loyalty and the Impacts of Service Quality: The Case of Five-Star Hotels in Jordan” to examine the effect of tourism service quality at five-star hotels in Jordan. The purpose of their study was to show the relationship between dimensions of tourism service quality and customer loyalty in the Jordanian Five stars hotels. The applied questionnaire for service quality was a self-administered questionnaire which was an adopted model of SERVQUAL scale (Parasuraman, Berry et al.1991). The questionnaire design was based on the five dimensions of service quality (including tangibility, reliability, responsiveness, assurance, and empathy) with 23 items of SERVQUAL

model (Parasuraman, Berry et al. 1991). The questionnaire of loyalty with seven items was adopted from (Zeithaml, Berry et al. 1996) and (Ndubisi 2003). The measurement grades of scale were based on five-point Likert scale. They distributed their questionnaires among the tourists who stayed in three Marriot hotel located in three cities during the summer of 2008, for three months, in Jordan (Al-Rousan and Mohamed 2010). 322 questionnaires were completed in the presence of the scholars. In order to analyze the data, SPSS version 16.0 was used and also various statistical techniques including: factor analysis, validity, reliability, and multiple regression analyses were performed to test and analyze the data. The findings showed that the four dimensions of service quality involving tangibility, empathy, reliability, and responsiveness predict customer loyalty significantly but assurance with $\beta = .07$, $p > 0.05$; $t\text{-value} = 1.431$ didn't have significant relationship with the customer loyalty. Furthermore, the findings of the study indicated that tangibility was the most remarkable factor in predicting the evaluation of tourism service quality which followed by empathy, reliability, and responsiveness respectively (Al-Rousan and Mohamed 2010).

Hypotheses 1: Service quality has a significant effect on customer loyalty in ECLS.

2.7.2 Service quality and customer satisfaction

Service quality of air cargo sector. “Service Quality and Customer Satisfaction in Freight and Forwarding Industries in Uganda (A Case Study of Ken Freight Uganda Limited)” by Wilfred Okurut Omoding (2018)¹². This study investigated the relationship between service quality and customer satisfaction in the freight and forwarding industry using the case of Ken Freight Uganda Limited. The study was guided by the following objectives: to assess the relationship between staff competence and customer satisfaction, to examine the relationship between service credibility and customer satisfaction, and to assess the relationship between service reliability and customer satisfaction. A case study design was used for a sample size of 128 respondents selected using simple and purposive random techniques. Findings indicated a significant positive relationship between staff and competence and customer satisfaction. It is regarded that service reliability has a positive relationship with customer satisfaction. There is a significant positive relationship between service credibility concerned with customer satisfaction. It was concluded that service quality has a significant positive relationship with customer satisfaction in Ken Freight Uganda

Limited. The study recommended that freight and forwarding organizations in Uganda should ensure that they continuously improve staff competence and service reliability for customer satisfaction to improve consistently.

Hypothesis 2: Service quality has a significant effect on customer satisfaction in ECLS.

2.7.3 Customer satisfaction and customer loyalty

Evidence shows that there is a significant relationship between customer satisfaction and customer loyalty (Leninkumar, 2017). Customer loyalty is considered a result of customer satisfaction, when customers who have good experiences with the service of the company will continue to deal with the company viewing it as less risky, thereby making them loyal and rational in decision-making. Many authors have advocated that customer satisfaction is one of the determinants of customer loyalty, especially in the service industry (Belas & Gabcova, 2016; Coelho & Henseler, 2012). According to Munari et al. (2013), satisfaction and loyalty are the components of ultimate loyalty, and satisfaction is the starting point of loyalty.

Hypothesis 3: Customer satisfaction has a significant effect on customer loyalty in ECLS.

2.7.4 The Mediation Effect of Customer Satisfaction between Service Quality and Customer Loyalty

Ngo Vu Minh & Nguyen Huan Hu (2016), “The interrelationships between service quality, customer satisfaction, and customer loyalty within the retail banking sector”. This research has proposed the increasingly competitive landscape and evolving business environments, firms are compelled to adopt customer-centric strategies, highlighting the significance of customer-related constructs such as satisfaction, quality, and loyalty in determining firm performance, particularly in industries like banking where customer engagement is profound. The research model proposed by the authors delineates these interrelationships, which are empirically tested through a survey involving 261 retail banking customers. Confirmatory factor analysis (CFA) and structural equation modeling (SEM) techniques are employed to analyze the data. Results indicate that service quality and customer satisfaction serve as crucial antecedents to customer loyalty, with satisfaction mediating the impact of service quality on loyalty. These findings underscore the

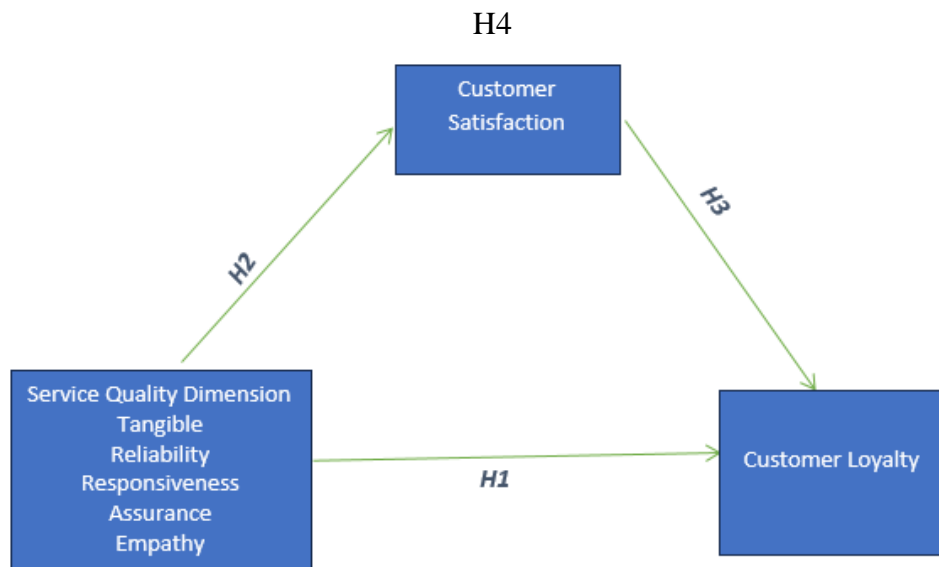
complex relationships among these constructs, emphasizing the need for a comprehensive approach to customer loyalty management that accounts for various interacting factors.

Hypotheses 4: Customer satisfaction mediates the relationship between service quality and customer loyalty in ECLS.

2.8 Conceptual Framework

In this conceptual framework, the researcher applies customer satisfaction to mediate service quality and customer loyalty by using the overall service quality dimension which is the independent variable, and customer loyalty as a dependent variable mediating customer satisfaction,

Figure 2.4 Conceptual Framework



- Sources: Conceptual framework modified from Maharani, T., & Wahyuni, S. (2021).

Chapter Three

3. Research design and methodology

Chapter three involves presenting the choice of research. Research design, research approach, data type, and data sources, the population of the study, sampling procedures, sampling techniques, method of data collection, Data collection Instruments and procedures Data analysis method and presentation, validity and reliability, and ethical considerations.

3.1 Research Design

The research design used is an explanatory research design and a descriptive research design. Explanatory design seeks to establish cause-and-effect relationships. The primary purpose of this research design was to determine how events occur, and which ones may influence a particular outcome (Dawson & Bob 2006). The descriptive research design is used to describe persons, organizations, settings, or phenomena. Using SERVQUAL dimensions, on the other hand explanatory approach is used to determine the extent of the relationship between dependent (customer loyalty), independent (service quality), and mediation (customer satisfaction) variables of the study. Correlation and regression analyses were employed to investigate this relationship.

3.2 Research Approach

The research approach used is quantitative data. Quantitative data is more suitable for highly structured research that may be statistically measured (V. Chinnathambi, 2013). According to him, there is a tendency for quantitative data to describe, analyze, and understand the behavior or impact of a certain phenomenon, often by using hermeneutic science (interpret and analyze) so a new theory or understanding may be outlined (Chinnathamb, 2013).

3.3 Population and Sampling Technique

3.3.1 Target population

This study specifically targeted shippers who are customers of Ethiopian Cargo and Logistics Services (ECLS) in Addis Ababa, Ethiopia. The population for this research included 450 shippers who are currently utilizing the outbound (export) shipping services of Ethiopian Cargo and logistics services according to the company information as of April 2024. Ethiopian Cargo has a wide customer base globally, but this study narrowed its focus on local shippers in Addis Ababa, Ethiopia who engage in export activities with ECLS for their air cargo & logistics service needs.

3.3.2 Sampling Technique

Since the entire population of the Ethiopian cargo could not be available at the same time due the destination export, capacity, shipment type, and frequency of flight, a non-probabilistic sampling technique, i.e. convenience sampling, was used. Convenience sampling technique which is a non-probabilistic sampling is used. Convenience sampling is a non-probability sampling method where units are selected for inclusion in the sample. This can be due to the homogeneity of the population, geographic proximity, availability at a given time, or willingness to participate in the research (Nikoloulou, 2022). According to Burns and Burns (2008), convenience sampling is often used because no alternative is available. This happens when, due to constraints of finance and permission, research can only be carried out on conveniently accessible groups (Burns and Burns, 2008). Furthermore, the researcher divides customers based on the shipment type of goods exported using ECLS. As a result, the researcher employed both stratified and convenience sampling techniques.

3.3.3 Sample size

There are various methods for figuring out the sample size, such as conducting a census for small populations, copying the sample size of related research, using published tables, and applying formulas to figure out the sample size (Kothari, 2004). According to Kothari (2004), As a general rule, one can state that the sample ought to be the right size, i.e. it shouldn't be too big or too small. The sample size of this study was obtained by applying the Taroyaman (1967) formula.

The sample size was determined by using Yamane's formula with 95% confidence level (Yamane, 1967). The formula used and the computation made to determine the sample size is shown below:

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

Where n=Sample size
 E=Sample error=(0.05)
 N=Population size
 N=

$$n = \frac{450}{1 + 450 (0.05)^2}$$

$$n = \underline{212}$$

e is the level of precision. This formula was used for the study's population, i.e., *N* =450 with ±5% precisions. Assuming a 95% confidence level and *e* =0.05, the sample size is 212.

The sample size of 212 customers was chosen from 450 shippers who use Ethiopian cargo and logistics services.

Sample proportion taken from Ethiopian cargo and logistics export customers

Table 3.1 Sample Proportion

S.No	Type of the shipment exported by the customer	Number of Customers	Sample
1	Flower and Vegetable	136	64
2	Garment & lather	83	39
3	Dry foodstuff and Injera	59	28
4	Meat	70	33
5	coffee	64	30
6	Other	38	18
	Total	450	212

Sources: ECLS, 2024

Table 3.1 shows a stratified sample shipment exported by the shipper along with a total number of customers in each shipment type category. Samples were collected from each shipment type. The number of samples taken from the shipment flower and vegetable exported by shipper was approximately 64, calculated as the ratio of stratum population to the total population, multiplied by the total sample size. Similarly, calculated for each shipment type based on respective populations 39,28,33,30, & 18.

3.4 Sources of Data

Primary and secondary data sources are the two basic types of data sources (Kothari, 2004). The initial, newly acquired, and thus uniquely characterized is called primary data. Secondary data are those that are already gathered and processed statistically by another party (Kothari, 2004). Both types of sources of data were applied in this study. A questionnaire was used to get the required information from the ECLS shipper customers in order to get the primary data. The secondary sources of data included a variety of documents, books, articles from journals, and research; company documents, and information available on the Ethiopian Airlines portal which served as a valuable resource for researchers looking to deepen their understanding of the topic under study.

These sources can provide insights into the operations, services, and customer experiences of Ethiopian Cargo and Logistics Services (ECLS). By reviewing relevant papers, documents, and online resources, researchers can gain valuable knowledge and perspectives that can inform their study and contribute to a more comprehensive analysis of the subject matter.

3.5 Data Collection Instrument

Primary data was collected through questionnaires which were distributed to shippers who use Ethiopian cargo and logistics services. The questionnaire is segmented into two parts. The first part was used to collect general demographic information of respondents. The second part focused on collecting data on the dimensions of Service quality and the overall satisfaction level of customers and loyalty. This part consists of 32 questions, each of them are asked on a 5-point Likert Scales constituting 1= 'strongly disagree', 2= 'disagree', 3= 'neutral', 4= 'agree' and 5= 'strongly agree'.

Modified structured questionnaires from previous studies are used to find out the relationship between service quality, and loyalty with the mediating effect of customer satisfaction in Ethiopia cargo & logistics services. The questionnaires adapted from Leninkumar, V. (2017) which was compiled from the works model of Parasuraman et al. (1988), including a 22-item Likert-type scale and Caruana (2002). The construct of customer satisfaction was measured through a 5-item scale measurement adopted from Gremler and Gwinner (2000). A five-item instrument adopted from Zeithaml (1996) was used to measure customer loyalty which was used and validated by Tam (2012). This study measures the quality of service based on the performance of service scores perceived by clients (Cronin & Taylor, 1992).

A pilot test is being conducted on 22 customers and some amendments were made to the original questionnaires by consulting my advisor, management and expert employee at Ethiopian cargo and Logistics Services to make sure the questionnaire measures what it has to be measured.

3.6 Data collection procedures

The procedure taken in this research was to identify respondents for questionnaires. Clear consent was given so they could understand the objective of the study and to give attention on its

importance. The questionnaire utilized in this study was developed based on established scales and previous studies to measure air freight service quality, customer satisfaction, and customer loyalty. The questionnaire included items related to service quality dimension (tangible, reliability, responsiveness, assurance, and empathy), The questionnaire was closed-ended and asked questions on a five-point Likert scale. Then the questionnaire data was distributed and collected properly from the respondents by the redesign schedule.

3.7 Data Analysis and Method

The data collected was analyzed by using quantitative methods. Quantitative analysis included statistical analysis of the mediating Effect of customer satisfaction on the relationship between Air freight service qualities and customer loyalty in the case of Ethiopian cargo and logistics services. For this research, the five dimensions of Service Quality based on the SERVQUAL model (Parasuraman et al., 1988) were taken as the independent variable while Customer Satisfaction was the mediating variable, and Customer Loyalty was the dependent variable.

A statistical package for the social sciences (SPSS 26.0) tool was used for the data analysis. In analyzing the data collected, the following descriptive-analytical methods were applied. Data obtained from official records was tabulated into different categories and analyzed using simple statistical methods such as percentages and graphs. Information obtained from the secondary and primary sources was used to make a descriptive analysis of the situation. Questionnaire and the analysis of demographic factors such as gender, age, education level, etc. Inferential statistics including correlation analysis, regression analysis, and mediation analysis Hayes PROCESS macro model 4 was performed. Based on the findings relevant conclusions and recommendations were drawn.

3.8 Model specification

The mediation test applied using Hayes PROCESS Macro Model 4. In the mediation model, service quality was used as the independent variable (x), customer loyalty was the dependent variable (y), and customer satisfaction was the (M) mediating variable (Hayes, A.F 2013).

Following, Hayes, A.F. (2013). the mediation model is specified as:

$$Y = \beta_0 + B_1(X) + B_2(M) + B_3(X*M) + \epsilon Y$$

Where: Y= Dependent variable

M = Mediating variable

X = Independent variable

β_0 = Constant term

β_1 = reflects the direct effect of service quality on customer loyalty.

β_2 =indicates the direct effect of customer satisfaction on customer loyalty.

β_3 = represents the indirect effect of service quality on customer loyalty through customer satisfaction

ϵY = Error Terms

3.9 Validity and Reliability Test

To assess the quality of research in the natural sciences and quantitative research in social sciences, reliability and validity are crucial (Saunders, Lewis, and Thornhill, 2016).

3.9.1. Validity

Validity is primarily determined by the appropriateness of the chosen measurement, the accuracy of the results analysis, and the generalizability of the conclusions (Saunders, Lewis, and Thornhill, 2016).Content validity is the extent to which a measuring instrument provides adequate coverage of the topic under study (Kothari, 2004). According to Kothari (2004), the content validity's determination is primarily based on personal judgment. There is no numerical way to represent it, but a panel of experts in the field will be employed to determine how well the measuring instrument complies with the criteria (Kothari, 2004).

As a result, the questionnaire was examined by the researcher's adviser to ensure content validity, the research questions were adopted & adapted from published and also presented in a form that fits the current study, and the validity of the questioners was tested & are valid including acceptable language use, relevance to the topic, study purpose, and coverage of the content categories.

3.9.2. Reliability

Replication and consistency are terms used to describe reliability; specifically, whether a researcher can successfully duplicate an earlier research design and get the same results (Saunders, Lewis, and Thornhill, 2016). In this study, the internal consistency of the variables in the research instrument was evaluated using Cronbach's alpha. Cronbach's alpha, a coefficient of reliability used to assess a test's or scale's internal consistency, yielded a result between 0 and 1 (Kothari, 2004). A Cronbach's alpha score of 0.70 or higher are considered as adequate to determine reliability (Kothari, 2004).

Table 3.2. Reliability Statistics/Cronbach's Alpha Value

NO	Research Variables	Cronbach' Alpha value	Number of items
1	Services Quality	0.967	22
2	Customer satisfaction	0.890	5
3	Customer loyalty	0.916	5

Sources: Own data survey (2024)

From Table 3.2 presented, it is clearly stated that all the variables used in this research were reliable since they obtained Cronbach's Alpha values more than 0.7. So, all values fall within the acceptable range to conclude good reliability.

3.10 Explanatory Factor Analysis

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and the Bartlett tests of sphericity were used to calculate the pre-analysis testing for the acceptability of the complete sample for factor analysis. The KMO measure of sample adequacy was 0.899, 0.825, and 0.877 for service quality, customer satisfaction, and customer loyalty, respectively. And the Bartlett tests of sphericity were significant at 0.000 for all three variables.

According to these findings, the sample was appropriate for use in factor analysis techniques. The current study also found five service quality characteristics Assurance, Tangibles, Responsiveness, Empathy, and Reliability with Eigen values larger than one, which is in line with the findings of Parasuraman et al. (1988). Approximately 75.05% of the variance was explained by these five service quality criteria. Items related to client loyalty and satisfaction are likewise packed with destiny. Customer satisfaction and loyalty were likewise loaded with their predetermined component and Eigenvalues larger than one, accounting for roughly 76.95% and 77.96% of the variation. In this current study, almost all items of service quality, customer satisfaction and customer loyalty had loadings greater than the widely accepted thumb rule of 0.5 (Hair et al., 1998). The factors' unidimensionality was guaranteed since nearly all of the individual item loadings were over 0.5 and all of the construct Eigenvalues were more than one.

3.11 Ethical Consideration

During data collection, respondents were informed about the objectives and methods of the study. They shall be informed of their right to participate voluntarily and of their right to ask questions. Ethical guidelines are followed in this study to ensure the confidentiality and anonymity of participants. Informed consent will be obtained from all participants, and their rights will be protected throughout the research process. In addition, to increase the confidentiality of information provided by respondents, they were not asked to write their names.

Chapter Four

4. Result and Discussion

The study's target population was customers who are shippers of Ethiopian cargo and logistic services. A total of 212 sample questionnaires were distributed. However, the researcher only collected 202 questionnaires from the respondents.

The results of analyzing the data collected from questionnaire respondents are described in three chapters. The first section discusses demographic data for respondents, the second discusses descriptive data (service quality, customer satisfaction, and customer loyalty), and the final section discusses explanatory analysis.

4.1 Response Rate

The study focused on 212 customers who use Ethiopian cargo and logistics services in Addis Ababa, Ethiopia. Moreover, the researcher sampled 212 employees, with 202 (95%) completing and returning questionnaires. However, due to a variety of factors, 10 (5%) questionnaires were not collected. The main reason for uncollected questionnaires was that some customers did not respond after completing the questionnaires. The data collected for each respondent's feedback was summarized using descriptive and inferential analysis in SPSS version 26.

4.2 Demographic Data

The study attempted to determine demographic data in the following variables using the 202 returned questionnaires, as shown in the table below:

Table 4.1: Gender

		Gender	
		Frequency	Percent
Male		137	67.8
Female		65	32.2
Total		202	100

Table 4.1 shows that 137 (67.8%) of respondents were men, while 65 (32.2%) were women. This suggests that male respondents have a larger share of Ethiopian cargo and logistics services customers than female customers.

Table 4.2: Age Group

Age		
	Frequency	Percent
18 to 25	14	6.9
26 to 35	89	44.1
36 to 45	76	37.6
46-year-old or above	23	11.4
Total	202	100

Table 4.2 The majority of respondents are between the ages of 26 and 35, account for 89 (44.1%) of all respondents, followed by those between the ages of 36 & 45, i.e. 76 (37.6%), 46 & above account for 23 (11.4%) and the remaining respondents are between the ages of 18 and 25, accounts for (6.9%). This implies that Ethiopian Cargo and Logistics services have customers of various ages.

Table 4.3 Educational level

Educational level		
	Frequency	Percent
High school complete	15	7.4
Diploma	35	17.3
University Degree	116	57.4
Post Graduate Level & above	36	17.8
Total	202	100

In terms of educational level, 116 (57.4%) of respondents have a University Degree, 36 (17.8%) have a Post Graduate Level & above, 35 (17.3%) have a master's degree, and 15 (7.4%) are High school complete. This suggest that majority of respondents are capable of responding to the question and understand the quality of services offered by the Ethiopian cargo and logistics services.

Table 4.4 Types of Cargo Shipment

Types of Cargo shipment		
	Frequency	Percent
Flower and Vegetable	62	30.7
Garment & lather	37	18.3
Dry foodstuff and Injera	26	12.9
Meat	31	15.3
coffee	28	13.9
others	18	8.9
Total	202	100

Table 4.4: Indicates that Ethiopian cargo and logistics customers shipment type, the majority of 62 (30.7%) Flower and vegetable shippers, followed by Garment & leather 37 (18.30%), Meat shippers account 31(15.3%), coffee shipper account 28(13.9%), Dry foodstuff and injera account 26 (12.90%) the remaining 18 (8.90%) belongs to other shipment meaning valuables. This information gives an insight into the main commodities being shipped by customers using Ethiopia's cargo and logistics services, suggesting targeted service delivery aimed at satisfying or retaining customer loyalty.

Table 4.5: Frequency of Export Per Month

Frequency of Export per month		
	Frequency	Percent
1 to 5	33	16.3
6 to 10	39	19.3
11 to 15	45	22.3
16 to 20	17	8.4
21 times and above	68	33.7
Total	202	100

Table 4.5: In terms of Ethiopian Cargo and logistics services users' frequency per month, the majority of 68 (33.7%) have 21 times and above, 45 (22.3%) have 11 to 15 frequency per month, 39 (19.3%) have 6 to 10 frequency per month, 33 (16.3%) have 1 to 5 frequency per month and the remaining 17(8.40%) have 16 to 20 frequency per month. This demonstrated that ECLS has frequent users, satisfied customers, and loyal customers.

Table 4.6: Annual Revenue (ETB)

Annual Revenue (in ETB)		
	Frequency	Percent
less than 2,000,000	42	20.8
2,000,001 to 4,000,000	51	25.2
4,000,001 to 6,000,000	37	18.3
6,000,001 to 8,000,000	27	13.4
8,000,001 and above	45	22.3
Total	202	100

Table 4.6: Ethiopian Cargo and logistics services users' annual revenue, the majority of 51 (25.2%) have annual revenue of 2,000,001 to 4,000,000 in birr, 45 (22.3%) have annual revenue of 8,000,001 Birr and above, 42 (20.80%) have annual revenue less than 2,000,000 Birr, 37 (18.3%) have annual revenue 4,000,001 to 6,000,000 Birr and the remaining 27(13.40%) 6,000,001 to 8,000,000 Birr. This suggesting by understanding the revenue of the customer Ethiopian cargo can adjust its services and pricing strategies to align with the financial abilities and requirements of its customers.

Table 4.7: Number of Employees

Number of Employees		
	Frequency	Percent
Less than 100	57	28.2
101 to 500	74	36.6
501 to 1000	32	15.8
1001 and above	39	19.3
Total	202	100

Finally, 74 (36.4%) of customers have 101 to 500 employees, 57 (28.20%) of customers have less than 100 employees, 39 (19.30%) of customers have 101 to 500 employees, and the remaining 32(15.80%) of customers have 501 to 1000 employee. This highlights many employees engaging to facilitate the shipping process.

4.3 Descriptive Analysis

The study investigates the effect of mediating customer satisfaction on the relationship with air freight service quality and customer loyalty in ECLS. The descriptive analysis below the mean showed disagree, neutrality, and agree on the variables to be tested.

The standard deviation is the amount by which the values deviate from the mean. On a five-point Likert scale ranging from 1 to 5, respondents were asked to rate the service quality, customer satisfaction, and customer loyalty questions. The researcher assumptions are listed below (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree).

Table 4.8 Mean Score decision rule

Mean Score	Interpretation
1.00-1.80	Strongly Disagree
1.81-2.60	Disagree
2.61-3.20	Neutral (Neither agreed not disagreed)
3.21-4.20	Agree
4.21-5.00	Strongly Agree

Source: Lind DA, Marchal WG, Wathen

According to (Lind DA, Marchal WG, Wathen SA, 2003) assumptions, the mean 3.0 as shown in the preceding paragraph is to be interpreted as measuring neutrality on the variables to be tested. The standard deviation was used to represent and indicate deviation from the mean. A higher standard deviation reflects a larger variances in opinions among customers regarding the subject matter.

4.4 Service Quality dimension

All five dimensions of Service Quality were employed in this study and the results are presented descriptively below.

4.4.1 Tangible

Tangible is one method of measuring service quality; thus, four questions were asked.

Table 4.9: Tangible

Variables	N	Mean	Std. D
Ethiopian Cargo has up-to-date equipment and technology.	202	3.98	1.044
Ethiopian Cargo has adequate routes and networks	202	4.02	0.898
Ethiopian cargo has physical facilities and an adequate system for tracking shipments.	202	3.83	1.048
Ethiopian cargo employees maintained a professional appearance.	202	4.18	0.908
Aggregate Mean and SD	202	4.00	0.975

Source: Own survey data (2024)

Table 4.9 Responses from the above questions for the service quality dimension were tangible. The aggregate mean score for tangible across all four aspects is 4.00 which means all of the respondents agreed on the range from 3.21 to 4.20 (supported by the mean score assumptions). These suggest on average customers perceive ECLS to have adequacy of equipment and technology, routes and networks, physical facilities, and tracking systems, as well as the professionalism of the employee.

4.4.2 Reliability

Reliability is one method of measuring service quality; thus, five questions were asked.

Table 4.10: Reliability

Variables	N	Mean	Std. D
Ethiopian Cargo provided the service as promised.	202	3.99	0.985
Ethiopian Cargo is able to handle customers' problem	202	3.71	1.006
Ethiopian Cargo staff handles the goods without any damage	202	3.73	0.941
Ethiopian Cargo ensures timely delivery services.	202	3.77	0.988
Ethiopian Cargo issued the document accurately.	202	4.12	0.702
Aggregate Mean and SD	202	3.86	0.92

Source: Own survey data (2024)

Table 4.10 shows the results of measuring, the aggregate mean score for reliability across all five aspects is 3.86 according to the above mean score assumption, and the majority of respondents agreed. (i.e. 3.21-4.20). Indicating that Ethiopian Cargo is perceived as reliable by its customers.

4.4.3 Responsiveness

Responsiveness is the other method of measuring SQ, so four questions were asked.

Table 4.11: Responsiveness

Variables	N	Mean	Std. D
Ethiopian cargo keeps customers updated related to the shipment status	202	3.92	1.031
Ethiopian Cargo provides timely service to customers.	202	3.96	0.877
Ethiopian Cargo is willing to help customers if any issues arise.	202	3.99	0.892
Ethiopian cargo quickly responds to all inquiries.	202	3.92	0.897
Aggregate Mean and SD	202	3.95	0.924

Source: Own survey data (2024)

Table 4.11 Responses from the above questions for services quality dimension were responsiveness which is all of the respondents agreed as the range from 3.21-4.20 (supported by the mean score assumptions). Generally, the aggregate mean score for responsiveness across all four aspects is 3.95, indicating that Ethiopian Cargo and Logistics services were generally perceived as responsive by its customers.

4.4.4 Assurance

Assurance is the other method of measuring SQ, thus, four questions were asked.

Table 4.12: Assurance

Variables	N	Mean	Std. D
The Ethiopian Cargo security for the goods is excellent	202	3.84	0.995
The courtesy of the employees of Ethiopian cargo is excellent.	202	4.04	0.886
Ethiopian Cargo staff had good knowledge of expertise to answer customer questions.	202	3.99	1.002
Ethiopian cargo ensures the security of customer transactions.	202	4.02	0.837
Aggregate Mean and SD	202	3.97	0.93

Source: Own survey data (2024)

Table 4.12 shows the results of measuring assurance the aggregate mean score for assurance across all four aspects is 3.97, indicating that Ethiopian Cargo is generally perceived as providing assurance to its customers, and according to the above mean score assumption, the majority of

respondents agreed. i.e. 3.21-4.20 (supported by the above mean score assumptions).

4.4.5 Empathy

Empathy is the other method of measuring SQ, thus, five questions were asked.

Table 4.13: Empathy

Variables	N	Mean	Std. D
Ethiopian Cargo gives attention to its customers.	202	4.02	0.831
Ethiopian Cargo is capable of handling customers' complaints.	202	3.82	0.947
Ethiopian Cargo provides promotional activities to customers	202	3.64	1.116
Ethiopian Cargo is able to meet the special needs of customers.	202	3.78	1.063
Ethiopian cargo provides convenient business hours.	202	3.80	1.151
Aggregate Mean and SD	202	3.81	1.022

Source: own survey data (2024)

Table 4.13 displays the results of measuring empathy the aggregate mean score for empathy across all five aspects is 3.81, indicating that Ethiopian Cargo is generally perceived as empathetic by its customers. According to the above mean score assumption, the majority of respondents agreed. i.e., 3.21-4.20 (supported by the above mean score assumptions).

The overall service quality dimensions namely tangibility, reliability, responsiveness, assurance, and empathy the aggregate mean score for all service quality dimension aspects is 3.92 and Std is 0.954 which means all the respondents agreed as the range from 3.21-4.20 (supported by the mean score assumptions). For this study, the assessment of overall service quality utilized integrated dimensions. According to Leninkumar (2017), the integrated dimensions of service quality were confirmed for measuring overall service quality.

4.5 Customer Satisfaction

To assess customer satisfaction, five questions were asked.

Table 4.14: Customer Satisfaction

Variables	N	Mean	Std. D
I am satisfied with the services Ethiopian Cargo offers,	202	3.78	1.099
I am satisfied with the Ethiopian cargo management	202	3.95	1.061
I am satisfied with the price offered by Ethiopian Cargo Services.	202	3.76	1.121
I am right to choose Ethiopian Cargo Services.	202	3.93	1.091
In my evaluation, Ethiopian Cargo's overall services are very good.	202	4.00	1.034
Aggregate Mean and SD	202	3.88	1.081

Source: own survey data (2024)

Table 4.14 demonstrates the results of assessing customer satisfaction based on five questions asked to customers of Ethiopian Cargo. Customer satisfaction is a crucial aspect of service quality evaluation, reflecting Ethiopian cargo customers' overall contentment and approval of the services provided. Overall, the aggregate mean score for customer satisfaction across all five questions is 3.88, indicating that Ethiopian Cargo generally meets customers' expectations and satisfies their needs. And, according to the above mean score assumption, the majority of respondents agreed. i.e. 3.21-4.20 (supported by the above mean score assumptions). While there is some variability in customers' satisfaction levels, particularly regarding specific aspects such as pricing, the overall satisfaction level is relatively positive. Addressing areas of lower satisfaction, such as pricing, could potentially lead to an even higher levels of overall customer satisfaction.

4.6 Customer loyalty

To describe customer loyalty in ECLS, five questions were asked. The results are shown in Table 4.9 below:

Table 4.15: Customer Loyalty

Variables	N	Mean	Std. D
I recommend Ethiopian cargo to other customers.	202	4.05	0.963
I consider Ethiopian cargo as the first choice.	202	4.00	1.02
I will continue to use Ethiopian cargo despite the price increase.	202	3.75	1.101
I Intended to use Ethiopian cargo continually in the future	202	4.04	0.945
I encourage other business partners and relatives to do business with Ethiopian Cargo Services.	202	4.03	0.954
Aggregate Mean and SD	202	3.97	0.997

Source: own survey data (2024)

Table 4.15 presents the results of analyzing customer loyalty in Ethiopian Cargo Logistics Services (ECLS) based on the five questions asked. Customer loyalty is a critical metric that reflects customers' intention to continue using a service provider's services, recommend the provider to others, and maintain a long-term relationship. Entire, the aggregate mean score for customer loyalty across all five questions is 3.97, indicating that Ethiopian Cargo enjoys high levels of customer loyalty. And according to the above mean score assumption, the majority of respondents agreed. i.e. 3.21-4.20 (supported by the above mean score assumptions). While there is some variability in customers' responses, particularly regarding price sensitivity, the overall loyalty levels are positive, suggesting a strong relationship between customers and Ethiopian Cargo. Enhancing loyalty further can contribute to sustainable business growth and success.

4.7 Inferential Statistics

4.7.1 Correlation Analysis

Correlation denotes the interdependence of variables. To correlate two phenomena, the two phenomena must have a cause-effect relationship; if such a relationship does not exist, the two phenomena cannot be correlated. The study used Pearson's correlation to investigate the relationship between the dependent variable and the independent variables. The significance level of the correlation was determined at 5% and 1%, and the correlation result was interpreted using

the (Somekh, B., & Lewin, C. (Eds.), 2011) criterion for evaluating the magnitude of a correlation, as shown in table 4.17 below.

The correlation coefficient (r) value, as shown in the table below, is used as a cutoff point to classify correlation strength as weak, moderate, or strong. As a result, if "r" is less than or equal to 0.33, the relationship is weak; between 0.34 and 0.66, it is moderate; and between 0.67 and 0.99, it is strong (Somekh, B., & Lewin, C. (Eds.), 2011) The table below shows the correlation coefficient for each variable.

The researcher also ran a correlation test using SQ as the primary independent variable, CS and CL as follows

Table 4.17 Correlation between the variables

		Correlations		
		Service Quality	Customer Satisfaction	Customer Loyalty
Service Quality	Pearson Correlation	1	.899**	.876**
	Sig. (2-tailed)		0.00	0.00
	N	202	202	202
Customer Satisfaction	Pearson Correlation	.899**	1	.855**
	Sig. (2-tailed)	0.00		0.00
	N	202	202	202
Customer Loyalty	Pearson Correlation	.876**	.855**	1
	Sig. (2-tailed)	0.00	0.00	
	N	202	202	202

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

Source: own survey data (2024)

As shown in Table 4.17 above (2-tailed), Pearson's correlation is applied to determine the interactions or level of association between service quality, customer satisfaction, and Customer loyalty. At the five percent threshold of P value (i.e., 0.00), all of the independent variables are strongly and completely correlated. Service quality and customer satisfaction have a strong positive ($r=0.899$, $P < 0.01$) this indicates that as the quality of services increases, so does customer satisfaction. There is also a strong and positive correlation between service quality and customer loyalty ($r=0.876$, $p < 0.01$) suggesting that higher service quality rises to be related with an increase

in customer loyalty. Furthermore, there is a strong positive correlation between customer satisfaction and customer loyalty ($r = 0.855$, $P < 0.01$) imply that higher level of customer satisfaction associated with greater customer loyalty.

4.8 Linear Regression Common Assumption Test

In this study, several linear regression assumption tests were used. To assess the research hypothesis, before applying a regression analysis. Multicollinearity, linearity, normality, and homoscedasticity are the regression assumptions to be considered in this study.

4.8.1 Multi collinearity

Multicollinearity occurs when the tolerance is greater than 0.10 and the average VIF is less than 10. (James, G., Witten, D., Hastie, T., & Tibshirani, R., 2013)

The multi-collinearity tests have shown that there was no problem with multi-collinearity because each independent variable's tolerance value was greater than 0.10 and the variation inflation factor was less than 10. As a result, the model was examined to see if it had this flaw.

Table 4.18 Multi-collinearity

Model		Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-0.081	0.184		-0.438	0.662		
	Tangibles	0.065	0.053	0.062	1.242	0.216	0.43	2.327
	Reliability	0.161	0.073	0.14	2.206	0.029	0.264	3.786
	Responsiveness	0.185	0.066	0.159	2.808	0.005	0.332	3.015
	Assurance	0.14	0.055	0.124	2.526	0.012	0.44	2.275
	Empathy	0.162	0.068	0.158	2.386	0.018	0.243	4.123
	Customer Satisfaction	0.328	0.07	0.354	4.659	0	0.184	5.445

a. Dependent Variable: Customer Loyalty

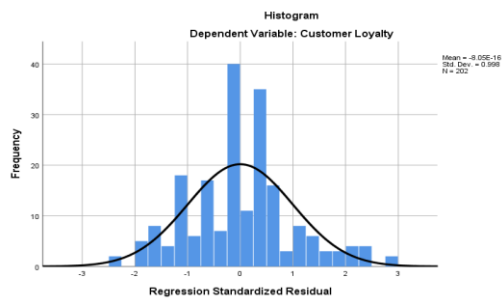
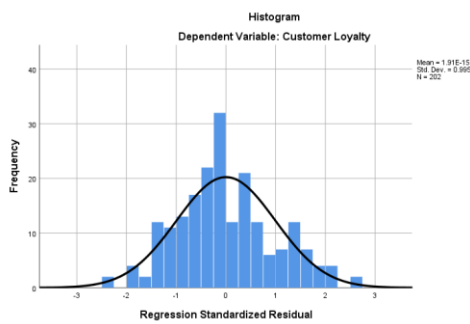
Source: own survey data (2024)

Table 4.18 Consequently, the investigation satisfies the multiple linear assumptions that the independent variable's tolerance value was greater than 0.10 and the variation inflation factor was less than 10.

4.8.2 Normality Test for the Residuals

In this study, the normality assumption is also tested and evaluated as follows:

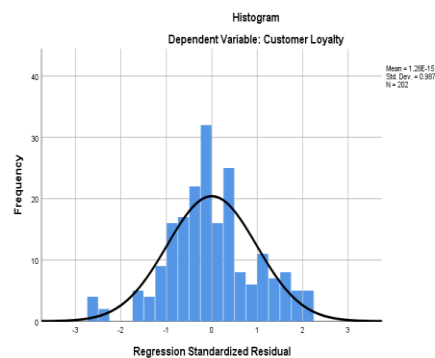
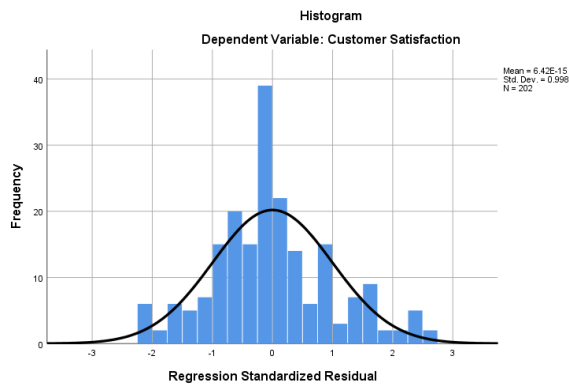
Figure 4.1: Normality test SQ to CL through CS Figure 4.2: Normality Test for Residual CS to CL



Source: own survey data (2024)

Figure 4.3: Normality Test for Residual SQ to CS

Figure 4.4 Normality test SQ to CL



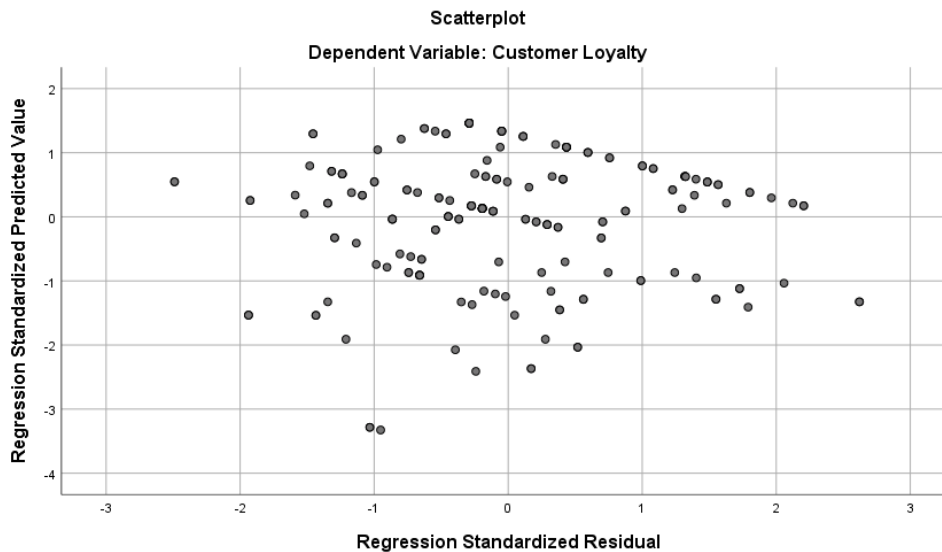
Source: own survey data (2024)

If the residuals are normally distributed, a bell shape should be used in the histogram as described by Brinyan, A. (2017). The above graph shows that the residuals are normally distributed in a bell shape.

4.8.3 Test for Homoscedasticity

Homoscedasticity assumption in regression requires consistent variances of residuals across predictor variable levels. A random pattern should be observed on scatter plots of standardized residuals against expected values, which are scattered around zero.

Figure 4.5 Homoscedasticity



In Figure 4.5. It shows the result of each of the outcomes against the predictor variable and intermediate variable. The plots show the random distribution of points in each plot. The indications of a situation in which the assumption of homoscedasticity is complied with.

4.8.4 Autocorrelation Assumption Test

The statistic has a value between 0 and 4. A value close to 2 indicates no autocorrelation, a value close to 0 indicates positive autocorrelation and a value close to 4 indicates negative autocorrelation (Field, 2005). As such, the independent error assumption is almost certainly met by a Durbin-Watson value of 1.959, which is very close to 2.

Table 4.19: Autocorrelation test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.876 ^a	0.767	0.766	0.42398	1.959
a. Predictors: (Constant), Service Quality					
b. Dependent Variable: Customer Loyalty					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.899 ^a	0.809	0.808	0.41572	1.69
a. Predictors: (Constant), Service Quality					
b. Dependent Variable: Customer Satisfaction					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.855 ^a	0.73	0.729	0.45663	2.053
a. Predictors: (Constant), Customer Satisfaction					
b. Dependent Variable: Customer Loyalty					

In this case, the value of 1.959 for customer loyalty, 1.690, and 2.053 for customer satisfaction confirms that there is no autocorrelation, allowing us to conclude that this analysis is correct.

4.8.5 Linearity Test

Linearity is defined as the degree to which a change in independent variables is related to a change in dependent variables. The points on such a plot should be close to the diagonal reference line in the case of a normal distribution. As a result, near the diagonal reference line, the P-plot shown in the figure below fails. The linearity requirements of linear regression are also met as follows:

Figure 4.6 Linearity test SQ to CL through CS

Figure 4.7 Linearity test CS to CL

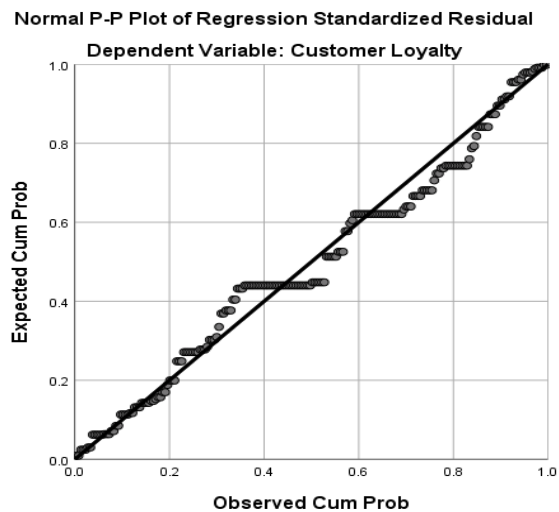
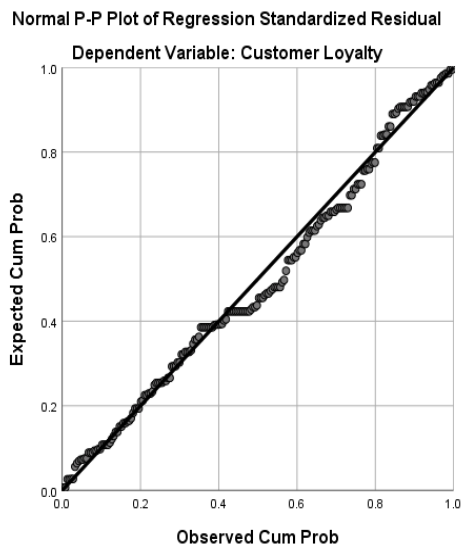


Figure 4.8 Linearity test SQ to CS

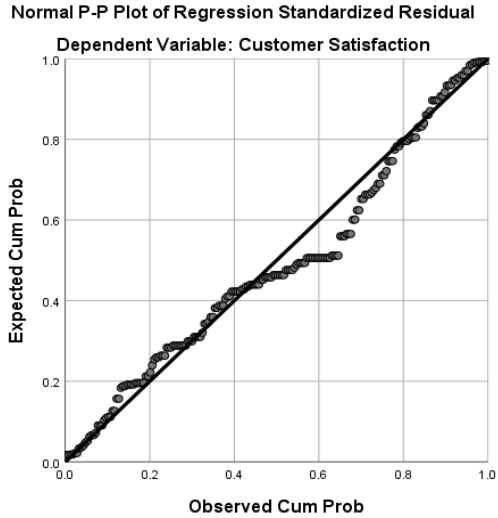
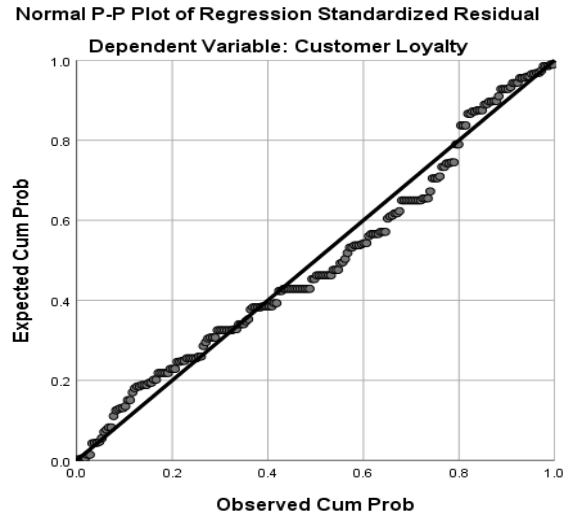


Figure 4.9 Linearity test SQ to CL



4.8.6 Regression analysis

The aim of using regression analysis was to find out how SQ affected customer satisfaction and loyalty. For each significant relationship, the coefficients of determination (R square value) regression coefficients (Beta coefficient), and p-values were reported. Each of the hypotheses proposed was empirically tested and discussed.

Table 4.20: Model Summary

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.889 ^a	0.791	0.789	0.40318

a. Predictors: (Constant), Service Quality, Customer Satisfaction
b. Dependent Variable: Customer Loyalty

Table 4.20 shows the R-value high correlation coefficient ($R = 0.889$) suggests a strong positive linear relationship between the predictors and customer loyalty, and R Square value of 0.791, it indicates that 79.1% of the variance in customer loyalty can be explained by variations in service

quality and customer satisfaction. This implies that as service quality and customer satisfaction increase, customer loyalty tends to increase as well. It could also suggest that these two factors are important drivers of customer loyalty for Ethiopian cargo and logistics services.

Table 4.21: Model Fit [ANOVAa]

		ANOVA^a				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	122.227	2	61.114	375.965	.000 ^b
	Residual	32.348	199	0.163		
	Total	154.575	201			
a. Dependent Variable: Customer Loyalty						
b. Predictors: (Constant), Service Quality, Customer Satisfaction						

Table 4.21 The above ANOVA table identifies that the value of F-stat is 375.965 and is significant as the level of significance is less than 5% ($p < 0.01$). This indicates that the overall model was reasonably fit and there was a statistically significant relationship between service quality and customer satisfaction and customer loyalty. The models predict the customer's loyalty to Ethiopian cargo and logistics significantly well as a result, overall, the regression model statistically and significantly predicts the outcome variable of customer loyalty.

4.9 Mediation Assumption

Before conducting a mediation analysis, several assumptions must be met, as outlined below:

1. The dependent, independent, and mediator variables (the variables of interest) should all be measured on continuous scales.
2. There should be a linear relationship among the variables of interest, which can be assessed using scatterplots or correlation coefficients.
3. The data should not exhibit multicollinearity, which occurs when independent variables are highly correlated with each other.

4. The presence of spurious outliers should be minimized, and the distribution of the variables should approximate normality.

In this study by examination of the data, as previously outlined, this study confirmed that it satisfied all essential mediation assumptions necessary to conduct a reliable and accurate mediation analysis.

4.10 Hypothesis Testing

The researcher developed four hypotheses to investigate the critical role of customer satisfaction in mediating the relationship between service quality and customer loyalty in Ethiopian cargo and logistics services. Based on the Hypothesis analysis, determine whether the model is useful for predicting the response at the 5% significance level: This result, as well as the table below, summarizes the hypotheses' findings/results. Once the model was tested for its fitness with observed data, the contribution of the mediating variable (customer satisfaction) was examined to explain the relationship between service quality and customer loyalty. Estimation of the influence of service quality on customer loyalty through the mediation effect of customer satisfaction was performed by the most recent and increasingly applied bootstrapping approach using Hayes PROCESS Macro (2022).

The first condition shown in Table 4.22 the beta coefficients of total effect indicated how and to what extent components of service quality influence customer loyalty in Ethiopian cargo and logistics services. It has been found that Service quality ($b=0.7163$, $p<0.001$) significantly and positively influences customer loyalty. **Hypothesis 1** stated that there is a significant and positive relationship between service quality and customer loyalty in ECLS. Thus, the study results accepted hypothesis 1. This finding appears to be similar to existing and empirical studies found in literature. The research conducted by Al-Rousan and Mohamed (2010), supports the positive relationship between service quality and customer loyalty. The recommendation from the study to continuously improve service quality aligns with the belief that enhancing service quality can lead to improved customer loyalty. Service quality ($b=1.238$, $P<0.001$) significantly and positively influence customer satisfaction. Hence, the researcher accepted **Hypothesis 2** which asserts there is a significant and positive relationship between service quality and customer satisfaction.

supported. This finding aligns with previous literature, such as the study by Wilfred Okurut Omoding (2018), which concluded a significant positive relationship between service quality and customer satisfaction in the freight and forwarding industry. The below table 4.22 also indicates customer satisfaction and customer loyalty. ($b = 0.3229$, $P < 0.001$) Customer satisfaction significantly and positively influences customer loyalty. Therefore, the result accepted **Hypothesis 3** stated that there is a significant and positive relationship between customer satisfaction and customer loyalty in ECLS. This finding aligns with such as the evidence from Leninkumar (2017), Belas & Gabcova (2016), Coelho & Henseler (2012), and Munari et al. (2013), which all confirm the significant positive relationship between customer satisfaction and customer loyalty.

The final result of the indirect effect of service quality on customer loyalty through customer satisfaction is ($b = 0.3998$, $p < 0.001$). Bootstrap Confidence Intervals (BootLLCI and BootULCI). The 95% bootstrap confidence interval for the indirect effect ranges from 0.1721 to 0.6181. Since the indirect effect (ab) is statistically significant, we can conclude that there is a mediation effect. This indicates that part of the relationship between service quality and customer loyalty is explained by customer satisfaction. Specifically, service quality influences customer satisfaction, which in turn influences customer loyalty. Therefore, customer satisfaction acts as a mediator in the relationship between service quality and customer loyalty. Therefore, the result accepted **Hypothesis 4** stated that there is a significant and positive relationship between service quality, customer satisfaction, and customer loyalty in ECLS. The research studied by Ngo Vu Minh and Nguyen Huan Hu (2016), suggests that customer satisfaction mediates the relationship between service quality and customer loyalty.

Table 4.22 Mediation Analysis Output

<p>Run MATRIX procedure: ***** PROCESS Procedure for SPSS Version 4.2 ***** Written by Andrew F. Hayes, Ph.D. www.afhayes.com Documentation available in Hayes (2022). www.guilford.com/p/hayes3 *****</p>																																		
<p>Model : 4 Y : CL customer loyalty X : SQ services quality M : CS customer satisfaction Sample Size: 202</p>																																		
<p>OUTCOME VARIABLE: CS</p>																																		
<p>Model Summary</p> <table border="1"> <thead> <tr> <th></th> <th>R</th> <th>R-sq</th> <th>MSE</th> <th>F</th> <th>df1</th> <th>df2</th> <th>p</th> </tr> </thead> <tbody> <tr> <td></td> <td>.8992</td> <td>.8085</td> <td>.1728</td> <td>844.5983</td> <td>1.0000</td> <td>200.0000</td> <td>.0000</td> </tr> </tbody> </table>								R	R-sq	MSE	F	df1	df2	p		.8992	.8085	.1728	844.5983	1.0000	200.0000	.0000												
	R	R-sq	MSE	F	df1	df2	p																											
	.8992	.8085	.1728	844.5983	1.0000	200.0000	.0000																											
<p>Model</p> <table border="1"> <thead> <tr> <th></th> <th>coeff</th> <th>se</th> <th>t</th> <th>p</th> <th>LLCI</th> <th>ULCI</th> </tr> </thead> <tbody> <tr> <td>constant</td> <td>-.9579</td> <td>.1692</td> <td>-5.6629</td> <td>.0000</td> <td>-1.2915</td> <td>-.6244</td> </tr> <tr> <td>SQ</td> <td>1.2380</td> <td>.0426</td> <td>29.0620</td> <td>.0000</td> <td>1.1540</td> <td>1.3220</td> </tr> </tbody> </table>								coeff	se	t	p	LLCI	ULCI	constant	-.9579	.1692	-5.6629	.0000	-1.2915	-.6244	SQ	1.2380	.0426	29.0620	.0000	1.1540	1.3220							
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SQ	1.2380	.0426	29.0620	.0000	1.1540	1.3220																												
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	coeff																																	
SQ	.5622																																	
CS	.3490																																	

***** TOTAL EFFECT MODEL *****						
OUTCOME VARIABLE: CL						
Model Summary						
R	R-sq	MSE	F	df1	df2	p
.8760	.7674	.1798	659.9023	1.0000	200.0000	.0000
Model						
	coeff	se	t	p	LLCI	ULCI
constant	-.3879	.1725	-2.2483	.0256	-.7281	-.0477
SQ	1.1160	.0434	25.6886	.0000	1.0303	1.2017
Standardized coefficients						
	coeff					
SQ	.8760					
***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y *****						
Total effect of X on Y						
Effect	se	t	p	LLCI	ULCI	c_cs
1.1160	.0434	25.6886	.0000	1.0303	1.2017	.8760
Direct effect of X on Y						
Effect	se	t	p	LLCI	ULCI	c'_cs
.7163	.0944	7.5863	.0000	.5301	.9024	.5622
Indirect effect(s) of X on Y:						
Effect	BootSE	BootLLCI	BootULCI			
CS	.3998	.1144	.1721	.6181		
Completely standardized indirect effect(s) of X on Y:						
Effect	BootSE	BootLLCI	BootULCI			
CS	.3138	.0869	.1386	.4775		
***** ANALYSIS NOTES AND ERRORS *****						
Level of confidence for all confidence intervals in output: 95						
Number of bootstrap samples for percentile bootstrap confidence intervals: 5000						
----- END MATRIX -----						

Path a : The coefficient effect for Service Quality predicting customer Satisfaction is 1.2380 ($p < .001$). This indicates that an increase in service quality by one unit leads to an increase in customer satisfaction by 1.2380.

Path b : The coefficient (effect) for Customer Satisfaction predicting Customer Loyalty is 0.3229 ($p < .001$). This means that an increase in customer satisfaction by one unit results in an increase in customer loyalty by 0.3229 units.

Indirect effect (ab): The indirect effect of SQ on CL through CS (ab) is 0.3998 with 95% confidence interval (BootSE = 0.1144, BootLLCI = 0.1721, BootULCI = 0.6181) doesn't include zero. This indirect effect represents the product of path a and Path b, suggesting that an increase in service quality indirectly increases customer loyalty through increased customer satisfaction.

Total effect (c'+(ab)): The total effect combines both the direct and indirect pathways through which SQ impacts CL. The total effect of SQ on CL is 1.1160 to understand the overall impact of SQ on CL, considering both direct and indirect pathways through CS.

Figure 4.10 Mediation analysis diagram

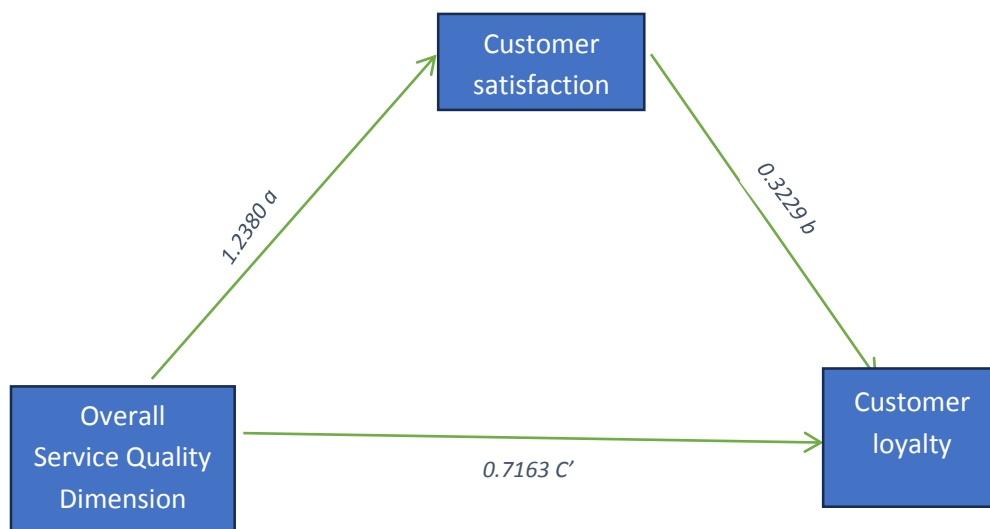


Figure 4.10 The above figure also shows the relationship between the independent variable (service quality) of the mediating variable (customer satisfaction) and the dependent variable (customer loyalty).

Table 4.23: Summary of Hypothesis Testing Results

Type	Hypothesis	Reasons	Results
Ha 1	SQ has a significant effect on CL	$\beta=0.7163$, $P < 0.05$, P-value =0.000	Supported
Ha 2	SQ has a significant effect on customer satisfaction	$\beta=1.238$, $P < 0.05$, P-value =0.000	Supported
Ha 3	Customer satisfaction has a significant effect on customer loyalty.	$\beta=0.3229$, $P < 0.05$, P-value =0.000	Supported
Ha 4	Customer satisfaction mediates the relationship b/n SQ on Customer loyalty	Effect =0.3998, BootLLCI :0.1721 BootULCI :0.6181	Supported

In addition to the Hayes Macro model 4 mediation tests, the researcher also performed the Sobel test described below.

Table 4.24 The Sobel test

Input:		Test statistic:	Std. Error:	p-value:
a	1.2380	Sobel test: 4.64644407	0.08603358	0.00000338
b	0.3229	Aroian test: 4.64376585	0.08608319	0.00000342
s _a	0.0426	Goodman test: 4.64912693	0.08598393	0.00000333
s _b	0.0686	Reset all	Calculate	

Table 4.24 The Sobel test statistic of 4.646 & p-value (0.00000338) indicates that the indirect effect (mediation effect) is statistically significant. All three tests (Sobel, Aroian, and Goodman), the test statistics are similar, and all have very small p-values (all less than 0.05). This showed that there is a significant mediation effect in the analysis, therefore it indicates that the mediator variable (customer satisfaction) plays a significant role in explaining the relationship between service quality and customer loyalty.

4.11 Discussion

Based on the descriptive analysis of respondent data, 137 (67.8%) were men, while 65 (32.2%) were women. Regarding customer shipment type, the majority of 62 (30.7%) Flower and vegetable shippers, followed by Garment & leather 37 (18.30%), Meat shippers account 31(15.3%), coffee shipper account 28(13.9%), Dry foodstuff and injera account 26 (12.90%) the remaining 18 (8.90%) belongs to other shipment meaning valuables this could implies most of the exported shipments by Ethiopian cargo and logistics services are Flower and vegetable shippers and by Garment & leather. Respondents regarding Service quality dimensions such as Tangible, reliability, responsiveness, assurances and empathy suggest that the responses were reliable which is all of the respondents agreed. Generally, the aggregate mean score for service quality dimensions across all aspects is 3.92, indicating that Ethiopian Cargo and logistics services were generally perceived as service quality dimensions by its customers.

Regarding customer satisfaction based on the five questions asked to customers of Ethiopian Cargo, the aggregate mean score for customer satisfaction across all five questions is 3.88, indicating that Ethiopian Cargo generally meets customers' expectations and satisfies their needs. Customer loyalty in Ethiopian Cargo Logistics Services (ECLS) is based on the five questions asked. Customer loyalty is an important measure that reflects customers' intention to continue using a service provider's services, recommend the provider to others, and maintain a long-term relationship. Entire, the aggregate mean score for customer loyalty across all five questions is 3.97, indicating that Ethiopian Cargo enjoys high levels of customer loyalty.

The Pearson's correlation coefficient, all the variables of Service quality, customer satisfaction, and loyalty have a strong correlation. Service quality and customer satisfaction have a strong positive ($r= 0.899$, $P < 0.01$) indicating that as the quality of services increases, so does customer satisfaction. There is also a strong and positive correlation between service quality and customer loyalty ($r= 0.876$, $p < 0.01$) suggesting that higher service quality rises to be related with an increase in customer loyalty. Furthermore, there is a strong positive correlation between customer satisfaction and customer loyalty ($r = 0.855$, $P < 0.01$) imply that higher level of customer satisfaction associated with greater customer loyalty. The ANOVA indicates that the value of F-stat is 375.965 and is significant as the level of significance is less than 5% ($p < 0.01$) which shows

the model was reasonably fit and there was a statistically significant relationship between service quality and customer satisfaction and customer loyalty.

The hypothesis test and mediation analysis total effect indicated that Service quality ($b=0.7163$, $p<0.001$) significantly and positively influences customer loyalty. Accordingly, **Hypothesis 1** is accepted, and this finding appears to be similar to existing and empirical studies found in literature. The research conducted by Al-Rousan and Mohamed (2010). The other result shows service quality ($b=1.238$, $P<0.001$) significantly and positively influences customer satisfaction. Hence, accepted **Hypothesis 2** aligns with the previous literature, by Wilfred Okurut Omoding (2018), Customer satisfaction and customer loyalty ($b =0.3229$, $P<0.001$). Customer satisfaction significantly and positively influences customer loyalty. **Hypothesis 3** aligns with the evidence from Leninkumar (2017), Belas & Gabcova (2016), Coelho & Henseler (2012), and Munari et al. (2013). The indirect effect of service quality on customer loyalty through customer satisfaction is ($b 0.3998$ $p < 0.001$). The Bootstrap Confidence Intervals (BootLLCI and BootULCI) 95% bootstrap confidence interval for the indirect effect ranges from 0.1721 to 0.6181. Since the indirect effect (ab) is statistically significant, we can conclude that there is a mediation effect. This indicates that part of the relationship between service quality and customer loyalty is explained by customer satisfaction. Specifically, service quality influences customer satisfaction, which in turn influences customer loyalty. Therefore, customer satisfaction acts as a mediator in the relationship between service quality and customer loyalty. Therefore, the result accepted **Hypothesis 4**. The research studied by Ngo Vu Minh and Nguyen Huan Hu (2016), suggests that customer satisfaction mediates the relationship between service quality and customer loyalty.

Chapter Five

5. Findings, Conclusion and Recommendation

The findings, conclusions & implications, and recommendations of the study, as well as existing literature, are covered in this chapter. The purpose of the study was to investigate the effect of customer satisfaction as a mediator in the relationship between service quality on air freight services and customer loyalty in Ethiopian cargo and logistics services.

5.1 Summary of Findings

This study investigates the effect of mediation of customer satisfaction on the relationship between the quality of air freight services and customer loyalty in Ethiopian cargo logistics services. The key findings and discussions are as follows:

- The study focused on 212 shipping customers who use Ethiopian cargo and logistics services outbound sector in Addis Ababa, Ethiopia. Furthermore, the researcher sampled 212 customers, with 202 (95%) completing and returning questionnaires.
- The respondents included men and women, out of which 137 (67.8%) were men, while 65 (32.2%) were women. the majority of respondents are between the ages of 26 and 35, account for 89 (44.1%) of all respondents, followed by those between the ages of 36 & 45, i.e. 76 (37.6%), 46 & above account for 23 (11.4%) and the remaining respondents are between the ages of 18 and 25, accounts for (6.9%).
- Regarding customer's shipment type, the majority of 62 (30.7%) Flower and vegetable shippers, followed by Garment & leather 37 (18.30%), Meat shippers account 31(15.3%), coffee shipper account 28(13.9%), Dry foodstuff and injera account 26 (12.90%) the remaining 18 (8.90%) belongs to other shipment meaning valuables.
- Respondents regarding Services quality dimensions such as Tangible, reliability, responsiveness, assurances and empathy the Responses were reliable which is all of the respondents agreed as the range from 3.21-4.20 (supported by the mean score assumptions). Generally, the aggregate mean score for services quality dimensions across all aspects is 3.92, indicating that Ethiopian Cargo and logistics services were generally perceived as service quality dimensions by its customers.

- The response results of assessing customer satisfaction based on the five questions asked to customers of Ethiopian Cargo. Customer satisfaction is a crucial aspect of service quality evaluation, reflecting Ethiopian cargo customers' overall contentment and approval with the services provided. Overall, the aggregate mean score for customer satisfaction across all five questions is 3.88, indicating that Ethiopian Cargo generally meets customers' expectations and satisfies their needs.
- The response results of analyzing customer loyalty in Ethiopian Cargo Logistics Services (ECLS) based on the five questions asked. Customer loyalty is an important measured that reflects customers' intention to continue using a service provider's services, recommend the provider to others, and maintain a long-term relationship. Entire, the aggregate mean score for customer loyalty across all five questions is 3.97, indicating that Ethiopian Cargo enjoys high levels of customer loyalty.
- As per Pearson's correlation coefficient all the variables Service quality, customer satisfaction, and loyalty have a strong correlation. Service quality and customer satisfaction have a strong positive ($r= 0.899$, $P < 0.01$) this indicates that as the quality of services increases, so does customer satisfaction. There is also a strong and positive correlation between service quality and customer loyalty ($r= 0.876$, $p < 0.01$) suggesting that higher service quality rises to be related with an increase in customer loyalty. Furthermore, there is a strong positive correlation between customer satisfaction and customer loyalty ($r = 0.855$, $P < 0.01$) imply that higher level of customer satisfaction associated with greater customer loyalty.
- The ANOVA identifies that the value of F-stat is 375.965 and is significant as the level of significance is less than 5% ($p < 0.01$). This indicates that the overall model was reasonably fit and there was a statistically significant relationship between service quality and customer satisfaction and customer loyalty.
- The hypothesis test and mediation analysis total effect indicated how and to what extent components of service quality influence customer loyalty in Ethiopian cargo and logistics services. It has been found that Service quality ($b=0.7163$, $p < 0.001$) significantly and positively influences customer loyalty. Accordingly, **Hypothesis 1** is accepted, and this finding appears to be similar to existing and empirical studies found in literature. The research conducted by Al-Rousan and Mohamed (2010), supports the positive relationship

between service quality and customer loyalty. The other result shows service quality ($b=1.238$, $P<0.001$) significantly and positively influences customer satisfaction. Hence, accepted **Hypothesis 2**. This finding aligns with previous literature, by Wilfred Okurut Omoding (2018), which concluded a significant positive relationship between service quality and customer satisfaction in the freight and forwarding industry. Customer satisfaction and customer loyalty. ($b =0.3229$, $P<0.001$) Customer satisfaction significantly and positively influences customer loyalty. Therefore, the result accepted **Hypothesis 3**. This finding aligns with such as the evidence from Leninkumar (2017), Belas & Gabcova (2016), Coelho & Henseler (2012), and Munari et al. (2013), which all confirm the significant positive relationship between customer satisfaction and customer loyalty.

- The indirect effect of service quality on customer loyalty through customer satisfaction is ($b 0.3998$ $p < 0.001$). Bootstrap Confidence Intervals (BootLLCI and BootULCI): The 95% bootstrap confidence interval for the indirect effect ranges from 0.1721 to 0.6181. Since the indirect effect (ab) is statistically significant, we can conclude that there is a mediation effect. This indicates that part of the relationship between service quality and customer loyalty is explained by customer satisfaction. Specifically, service quality influences customer satisfaction, which in turn influences customer loyalty. Therefore, customer satisfaction acts as a mediator in the relationship between service quality and customer loyalty. Therefore, the result accepted **Hypothesis 4**. The research studied by Ngo Vu Minh and Nguyen Huan Hu (2016), suggests that customer satisfaction mediates the relationship between service quality and customer loyalty.

5.2 Conclusion and Implications

This study aimed to address the research question and relationship between service quality and customer loyalty through customer satisfaction as a mediating factor in the context of Ethiopian cargo and logistics services.

In summary, this study identifies and concludes that there is a significant and positive correlation between service quality and customer satisfaction in ECLS. This relationship is supported by both the correlation coefficient and hypothesis testing results. Service quality significantly influences customer loyalty, both directly and indirectly through customer satisfaction. This shows that improving service quality can lead to increased customer loyalty in Ethiopian cargo and logistics services. Customer satisfaction also significantly influences customer loyalty, suggesting that satisfied customers are more likely to show loyalty towards the service provider. Customer satisfaction acts as a mediator in the relationship between service quality and customer loyalty. This mediation effect implies that improving service quality leads to higher customer satisfaction, which in turn increases customer loyalty.

The study has the following theoretical and managerial contributions: From a theoretical point of view, the outcome of this research will help researchers fill the gap in the air freight sector first by confirming the relationship between service quality in the ECLS and customer satisfaction and loyalty. Second, the study's dependence on the SERVQUAL model by Parasuraman et al. (1988) highlights its enduring relevance in evaluating service quality. The study supports the established theoretical frameworks, providing a structured approach for understanding and measuring service quality in the ECLS sector. Finally, the study value of mediation was analyzed using the Hayes, A.F. Process Model (2013) to advance the theoretical understanding of customer satisfaction and loyalty in air freight services. From a managerial point of view, the findings of this study have some implications for ECLS management. First, they should prioritize continuous improvement in service quality by enhancing efficiency, timeliness, reliability, and the overall customer experience. In addition to this, ECLS managements has to regularly monitor and evaluate customers, which can help ECLS to deliver the services that customers value the most and thus also attract new customers. Second, this study highlights ECLS to implementation the loyalty programs or initiatives to reward and retain loyal customers. Third, provide training, development, and communication that will help empower employees to deliver outstanding service that can contribute to increased customer satisfaction and loyalty.

5.3 Recommendation

This study provides a better understanding on relationship between service quality, customer satisfaction and customer loyalty. The study suggests that service quality through customer satisfaction plays a very important role in determining customer loyalty in Ethiopian cargo and logistics services. Given, the findings that evolved from the study above, the following recommendations have been made to improve service quality, to ensure customer satisfaction, and customer loyalty in ECLS.

- Improving the quality of service has a significant impact on both customer satisfaction and loyalty. Ethiopian Cargo and Logistics Services should work on continuous process improvement in service quality through enhancing efficiency, timeliness, and reliability, in their cargo and logistics activities.
- Ethiopian Cargo and Logistics Services needs to enhance its customer satisfaction measures that will help implement Strategies that could be able to measure and monitor customer satisfaction levels. This could involve collecting feedback through surveys, monitoring online reviews, and conducting regular assessments of customer needs and expectations. Addressing any issues related to dissatisfaction promptly can help maintain high levels of customer satisfaction.
- Ethiopian Cargo and Logistics Services Should adopt a customer loyalty program that identifies the strong positive impact of customer satisfaction on loyalty and could consider implementing loyalty programs or initiatives to reward and retain loyal customers. These programs could offer incentives, discounts, or exclusive benefits to encourage repeat business and foster long-term relationships with customers.
- Providing training and bench the best industry customer service experiences that will help empower employees to deliver outstanding service that can contribute to increased customer satisfaction and loyalty. Therefore, Ethiopian Cargo and Logistics Services can invest in training and development programs for staff to ensure they understand the importance of providing high quality service and fostering positive customer interactions.
- Ethiopian Cargo and Logistics Services should work to build trust through clear communication and maintain open and transparent communication channels with

customers, provide updates on service improvements, changes, and any potential disruptions that can increase customer satisfaction and loyalty, even in challenging situations.

Considering the above recommendations, Ethiopian Cargo and Logistics Services can leverage the recommendations of this analysis to enhance its service quality, improve customer satisfaction, and ultimately cultivate greater customer loyalty.

5.4 Limitations and Future Research

The study was constrained to only outbound customers which means shippers in using the Ethiopian cargo and logistics Hub at Addis Ababa and only from the shipper (exporter) perspective. However, it would be more appropriate to examine the mediating effect of import customers of ECLS on the relationship between service quality, customer satisfaction, and customer loyalty. The study exclusively utilized a quantitative approach, neglecting qualitative dimensions. An exploration of qualitative factors could provide richer insights. Additionally, extending the research to Ethiopian Airlines passengers could offer broader perspectives.

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Appendix 1

Addis Ababa University

School of Commerce

Department of Marketing Management

Questionnaire for Customers of Ethiopian cargo & logistics services (ECLS)

Dear Respondents.

First and foremost, I would like to express my deepest gratitude for your cooperation in sharing your genuine thoughts on the questionnaire. This questionnaire is mainly for the purpose of completing the academic research for the requirement of a master's degree in Marketing Management program. I am a student of Marketing Management at Addis Ababa University School of Commerce, and I am conducting a survey on the title "**The mediating effect of customer satisfaction on the relationship between air freight services quality and customer loyalty: The Case of Ethiopian cargo & logistics services**". Please rest assured that the information you provide will be kept confidential and solely used for academic purposes. Your opinions and comments will be respected and treated with confidentiality. You are not required to disclose your name to encourage open and honest responses. If you have any inquiries, please feel free to contact:

Name: Ephrem Tadele

Telephone: 0911808097, Email: etzephi@gmail.com

Part I: General Information:

In answering to the questionnaire, please use tick (✓) mark in the boxes provided.

1. Gender

- Male Female

2. Age

- 18 to 25-year-old 36 to 45-year-old
 26 to 35-year-old 46-year-old or above

3. What is your educational level?

- High school complete Diploma University Degree
 Post Graduate Level & above.

4 Types of Cargo shipment

- Flower and Vegetable Garment & lather Dry foodstuff and injera
 Meat coffee others Specify_____

5. Frequency of export cargo using Ethiopian cargo and logistics service within one month

- 1 to 5 times 6 to 10 times 11 to 15 times 16 to 20 times
 21 times and above

6. Annual Revenue (in ETB)

- Less than 2,000,000 2,000,001 to 4,000,000 4,000,001 to 6,000,000
 6,000,001-8,000,000 8,000,001 and above

7. Number of Employees

- Less than 100 101 to 500 501 to 1000
 1001 and above

Part II: Dimensions of service quality and the mediating effect of customer satisfaction on customer loyalty.

Directions: On a 5-point Likert scale, you are required to indicate the extent to which you agree or disagree with each statement. In answering to the questionnaire, please use tick (✓) mark in the boxes provided. Where (1=strongly Disagree; 2=Disagree; 3=Neutral; 4= Agree and 5= Strongly Agree).

CODE	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
		1	2	3	4	5
A. Service Quality						
1. Tangibles (TNG)						
TNG1	Ethiopian Cargo has up-to-date equipment and technology.					
TNG2	Ethiopian Cargo has adequate routes and networks					
TNG3	Ethiopian cargo has physical facilities and an adequate system for tracking shipments.					
TNG4	Ethiopian cargo employees maintained a professional appearance.					
2. Reliability (REL)						
REL1	Ethiopian Cargo provided the service as promised.					
REL2	Ethiopian Cargo is able to handle customers' problem					
REL3	Ethiopian Cargo staff handles the goods without any damage					
REL4	Ethiopian Cargo ensures timely delivery services.					
REL5	Ethiopian Cargo issued the document accurately.					
3. Responsiveness (RES)						
RES1	Ethiopian cargo keeps customers updated related to the shipment status.					
RES2	Ethiopian Cargo provides timely service to customers.					
RES3	Ethiopian Cargo is willing to help customers if any issues arise.					
RES4	Ethiopian cargo quickly responds to all inquiries.					

4. Assurance (ASR)						
ASR 1	The Ethiopian Cargo security for the goods is excellent					
ASR 2	The courtesy of the employees of Ethiopian cargo is excellent.					
ASR 3	Ethiopian Cargo staff had good knowledge of expertise to answer customer questions.					
ASR 4	Ethiopian cargo ensures the security of customer transactions.					
5. Empathy (EMP)						
EMP1	Ethiopian Cargo gives attention to its customers.					
EMP2	Ethiopian Cargo is capable of handling customers' complaints.					
EMP3	Ethiopian Cargo provides promotional activities to customers					
EMP4	Ethiopian Cargo can meet the special needs of customers.					
EMP5	Ethiopian cargo provides convenient business hours.					
B. Customer Satisfaction (CS)						
CS1	I am satisfied with the services Ethiopian Cargo offers					
CS2	I am satisfied with the Ethiopian cargo management					
CS3	I am satisfied with the price offered by Ethiopian Cargo Services.					
CS4	I am right to choose Ethiopian Cargo Services.					
CS5	In my evaluation, Ethiopian Cargo's overall services are very good.					
C. Customer Loyalty (CL)						
CL1	I recommend Ethiopian cargo to other customers.					
CL2	I consider Ethiopian cargo as the first choice.					
CL3	I will continue to use Ethiopian cargo despite the price increase.					
CL4	I Intended to use Ethiopian cargo continually in the future					
CL5	I encourage other business partners and relatives to do business with Ethiopian Cargo Services.					

Thank you!!

Appendix 2

Table 4.16: Correlation Test

		Correlation						
		Tangibles	Reliability	Responsiveness	Assurance	Empathy	Customer Satisfaction	Customer Loyalty
Tangibles	Pearson Correlation	1						
	Sig. (2-tailed)							
Reliability	Pearson Correlation	.688**	1					
	Sig. (2-tailed)	0.00						
Responsiveness	Pearson Correlation	.665**	.775**	1				
	Sig. (2-tailed)	0.00	0.00					
Assurance	Pearson Correlation	.522**	.634**	.592**	1			
	Sig. (2-tailed)	0.00	0.00	0.00				
Empathy	Pearson Correlation	.649**	.766**	.734**	.707**	1		
	Sig. (2-tailed)	0.00	0.00	0.00	0.00			
Customer Satisfaction	Pearson Correlation	.723**	.810**	.746**	.727**	.845**	1	
	Sig. (2-tailed)	0.00	0.00	0.00	0.00	0.00		
Customer Loyalty	Pearson Correlation	.687**	.792**	.762**	.708**	.809**	.855**	1
	Sig. (2-tailed)	0.00	0.00	0.00	0.00	0.00	0.00	

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