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**The Effect of Service Quality on Customer Satisfaction:  
*The Moderating Roles of Perceived Value and Service Failure in  
the case of Ethio teleom***

**A Thesis Submitted to Addis Ababa University College of Business and  
Economics, Graduate Studies in Partial Fulfillment of the Requirements for  
the Degree of Executive Master of Business Administration**

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## Acronyms

ADSL	Asymmetric Digital subscriber Line
CS	Customer Satisfaction
ET	Ethio Telecom
FBB	Fixed Broadband
ITU	International Telecommunication Union
MBB	Mobile Broadband
PV	Perceived Value
SF	Service Failure
SQ	Service Quality
SPSS	Statistical Package for Social Science

## **Abstract**

*Service quality in relation to customer satisfaction is one of the interesting research topic area in business strategy and marketing disciplines in the last few decades. The purpose of this research paper is to examine the effect of service quality on enterprise broadband subscribers' satisfaction of ethio telecom using SERVPERF model and moderating variables. Although a number of related researches have been conducted in different parts of the world in different companies, only limited studies have used moderating variables of Perceived Value and Service failure. This research, thus, aims to address this gap by taking 313 stratified random sampling from ethio telecom enterprises customers in Addis Ababa. Both direct Service quality (SQ) – Customer Satisfaction (CS) relationship and interaction effects of perceived value (PV) and Service failure (SF) as moderators were examined in this relationship. Moderated hierarchical regression has been applied to see how SQ as independent variable and PV and SF as moderator's influence customer satisfactions. From the analyses it is confirmed that SQ has positive and statistically significant effect on customer satisfaction. PV and SF are also found to moderate the relationship between SQ and customer satisfaction. Recommendations and further studies are also forwarded in this study.*

***Key Words: Service Quality, Customer Satisfaction, Perceived Value, Service Failure, Moderating Variables***

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

Service quality is the degree and direction of discrepancy between consumer's perceptions and expectations in terms of different but relatively important dimensions of service quality, which can affect the future purchasing behavior of the customers (Parasuraman, A., Zeithaml, V.A., Berry, L. 1985). It is considered as one of the top priorities of firms as it gives the company a competitive advantage, helps to sustain growth and increases efficiency (Anderson, Fornell, 1994). Perceived quality is simply the overall customer's assessment of the standard process of receiving customer services.

The key strategy for the success and survival of any business institution is the deliverance of quality services to customers (Parasuraman. al 1985; Zeithaml et., al, 1990). Excellent services increases customer satisfaction and leads to repeat customer purchase behavior (Cronin & Taylor, 1992) which ultimately increases the market share of the companies and generates high revenues.

Customer Satisfaction is feeling of pleasure or disappointment which results from comparing a product's or service's perceived performance or outcome against expectations (Kotler, 2012). It is the provisions of goods or services that fulfill customer expectation in terms of quality of service and more specifically in relation to price paid. The goal of most effective business is to maintain a high level of customer satisfaction by providing value added transactions through excellent service quality that can enhance company performance and profitability in return. Customer satisfaction is highly interrelated with service price and service quality where fair service price and higher service quality brings enhanced customer satisfaction, repeat patronage, and increased profits and customer loyalty (Anderson, Fornell, 1994)

In today's dynamic and competitive environment telecommunication industry plays an important role for the success of any businesses. It has great influence on economic, social, political, personal and legal affairs where it is becoming a prerequisite for successful achievements.

Telecom services recognized throughout the world as an important tool for the socio-economic development of a nation where it has a significant contribution for the country GDP. It is the key support and essential service for rapid growth and modernization of various sectors of the economy (Dubale 2010).

Telecommunications service was introduced in Ethiopia by Emperor Menelik II in 1894 when the construction of the telephone line from Harar to Addis Ababa was started and it is renamed as Ethio telecom on 29th November 2010. Ethio telecom is established with the ambition of supporting the steady growth of the country within the Growth and Transformation Plan (GTP). Concentrating its efforts on the development of education, health and agriculture, the Ethiopian government has decided to focus on the improvement of telecommunication services, considering them as a key lever in the development of Ethiopia.([www.ethiotelecom.et](http://www.ethiotelecom.et))

Ethio telecom with a vision of being a world class telecom service provider has go through a vendor financing of \$1.5bn dollar for Mobile, wireless and fixed network infrastructures including third generation mobile technology and a national fiber optic backbone in 2006. In addition, in 2010 the government has outsourced the management of France Telecom (FT) for two years contract to create world class telecom service provider and in 2014 the company go through multi-vendor financing of 1.5bn dollar with Huawei, ZTE and Ericsson for infrastructure expansion including the rural area (ethioteleom loan report 2017). Recently in 2018 the company revised its tariff in national, international calls and the internet services to improve the customer satisfaction level ([www.ethiotelecom.et](http://www.ethiotelecom.et); Ezega 2018; ethioteleom internal data 2019). In the near future the Ethiopian government is planning to privatize the sector (Dr. Abey Ahmed 2018; Ezega 2018)

Despite the strong efforts and the changes delivered through infrastructures developments, new products and services, new processes and new tariff the customers of Ethio telecom are always feeling dissatisfied. The company has always been complained for focusing only on increasing its subscriber base and ignoring improvements on it service quality, weak performance, poor network quality, incompetent employees and the continues service failures (Fortune 2018; internal report, 2019)

In various studies, there has been a clear indication that service quality influences customer satisfaction (Cronin & Taylor, 1992; Taylor and Baker 1994; McDougall and Levesque, 2000; Zeithaml et al., 1996;). Other more recent studies focusing on Service quality have also shown a positive impact on customer satisfaction (McDougall & Levesque, 2000). Besides direct Service quality to customer satisfaction relationship, scholars also recommend further researches with moderator variables between service quality and customer satisfaction. Through this perspective, introducing other variables into the analysis helps to uncover the hidden effect and understand the original relationship of service quality and customer satisfaction (Cohen et al, 2003).

Caruana et al. (2000), examined that perceived value has a significant moderating effect on the relationship between service quality and customer satisfaction. That is, the interaction between service quality and perceived value explained more of the variance in satisfaction than the direct influence of either service quality or perceived value on customer satisfaction. (Ryu & Han, 2010).

Walfried M. (2000), studied the effect of service quality on overall satisfaction is influenced somewhat by the occurrence of service failure. Specifically, as the number of service failure incidents decreases, the positive effect of service quality on satisfaction is intensified. It stands to reason that as the incidence of service failure declines, customers are better poised to recognize and thereby appreciate the process elements of service quality. In other words, when the technical or core element of the service what is actually delivered is fairly stable i.e. low levels of service failure, the customer is able to devote more attention to how the service is delivered.

This is the rationale behind this research, Ethio telecom is struggling for quality of service without considering customer value and service failure in relation to the company service quality and customer satisfaction. In this regard, perceived value and service failure play instrumental role in their success and it is assumed that the presence of these moderator variables could help the company to achieve high level of customer satisfaction. Thus, the aim of this research is to investigate the moderating roles of perceived value and service failure as contingency variables in the service quality and customer satisfaction relationship.

## **1.2. Statement of the Problem**

Service quality has become a notable research area because of its strong impact on customer satisfaction, business performance, customer loyalty and gaining higher profit. Satisfying customer's is a difficult task, especially when it comes to services, since studies have shown that consumers level of satisfaction is generally lower for services than physical products (Anderson, Fornell, 1994).

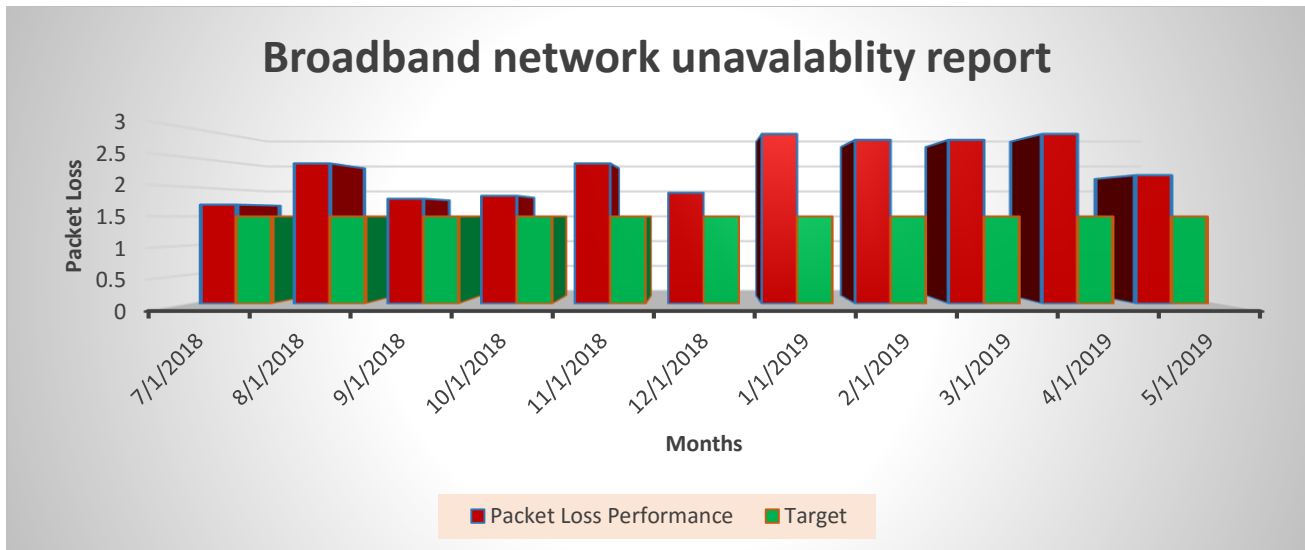
Ethio telecom in a mission of providing high quality, innovative and affordable telecom products and services that can enhance the development of country and ensure high customer satisfaction is in great customer complaint of its service quality. Ethio telecom customers are highly discontented with its service quality, price level, network performance and other factors.

In line with the current reform in Ethiopia and the customer dissatisfaction level, Ethio telecom has reduced its tariff in most of its service by almost half of the original tariff after assessing other telecom companies tariff whose per capital incomes are similar to Ethiopia. The dramatic tariff revision of ethio telecom is a big strategy where the company tariff was a great obedient of most customers in the country since its establishment. In addition to the new tariff Ethio telecom also introduced other strategies including new promotion strategy, new product and services, new service delivery process (Fortune 2018; [www.ethiotelecom.et](http://www.ethiotelecom.et), internal report)

Unfortunately, following the tariff revision the service quality of Ethio telecom become a great concern of most enterprise customers and according to their opinion and feedbacks customers are highly dissatisfied with the service performance of ethio telecom where its quality deteriorating and affecting the day today activities of businesses and society (Ezega 2018; Fortune 2018; ethioteleom internal report, 2019). The fixed monthly broadband payments while the services are down or inaccessible, which should have been compensated by ethioteleom, is the main issue of enterprise customers (Ezega 2018; Fortune 2018; ethioteleom internal report, 2019). Above all the gap on the compatibility of broadband internet speed against the payment is major complain of most enterprise customers. In addition, customers stated that once the broadband services are provided by the company absence of proactive recovery on the unavailability of broadband services because of service failures, interruptions, congestions, faults, inaccessibility affects the day today business transactions (Fortune, 2018; internal complain report)

Today's business network is the foundation of business performance, when the network experiences performance issues; it is ultimately the business that suffers. Network performance can be affected by a number of operational problems, and packet loss is one of the most common one.

Figure1. 1 Broadband Internet Packet Loss Report from Jul-18 to May-19



Source Ethio telecom internal data (2019)

Packet loss is one of the most important metrics used to measure the network performance of broadband internet service of ethioteleom. Packet loss is during internet or any network accessing, small units of data called packets are sent and received. When one or more of these packets fails to reach its intended destination, this is called packet loss. For customers, packet loss manifests itself in the form of network disruption, slow internet service, and even total loss of network connectivity. Any application can be disrupted by packet loss, but the most likely victims are applications that rely on real-time packet processing. The main reasons for the packet loss is network congestion, damages, error and others (Robert W. 2005)

As we can see the average monthly packet loss report of ethioteleom from Jul-18 to May 19 in fig 1.1 packets are lost inconsistently and even beyond the sated target of ethioteleom. On average broad band internet packets are lost from 9% to 47% on the stated periods which can show the interruption and service down time of the broadband internet.

A number of studies have addressed the relationship between Service quality and customer satisfaction and many of the studies have linked service quality and customer satisfaction as having direct relationship (Lai et al., 2009; Wu and Lang, 2009; Kuo et al.,2009; Baker, 2000). This shows that Service quality is influential to achieve customer satisfaction and company performance in return. However, some other studies have depicted weak and insignificant link (Nimako et.al 2010; Uddin & Bilkis 2012; Agbor, 2011). Consequently, the cause of this mixed results needs further research.

According to Lee (2013), service quality and customer satisfaction also contingent by other factors perceived value, perceived price and switching cost. Caruana (2000), also shows the moderating role of value on service quality and customer satisfaction relationship. Lassa (2000), Jeremiah, Ojera, Ochieng (2015), demonstrate the moderating effect of service failure on service quality and customer satisfaction.

In Ethio telecom where service quality is the big issue of the customers it is worthwhile to include customers perceived value and service failure to achieve higher customer satisfaction level and succeed in the upcoming privatization. Although a lot of researches has been conducted on the effect of service quality on customer satisfaction, customer loyalty and company performance, as to the researcher knowledge there is no study conducted on the effect of Service quality on customer satisfaction with a moderating variable of perceived value and Service failure. Therefore, the present study tried to deliver empirical evidence on the subject matter by analyzing the effect of Service quality on customer satisfaction with moderating roles of perceived value and service failure.

This study, therefore examine the effect of service quality on customer satisfaction in the case of ethio telecom with perceived value and service failure integrated as moderators.

### **1.3. Research Questions**

This research tried to address the following three research questions:

1. How service quality is related to Ethio telecom customers ‘satisfaction?
2. How perceived value moderates the relationship between service quality and customer satisfaction?

3. How service failure moderates the relationship between service quality and customer satisfaction?

## **1.4. Objective of the Study**

### **1.4.1. Main Objective**

The main objective of the research is to examine the effect of ethio telecom service quality on customer satisfaction and in interaction with perceived value and service failure

### **1.4.2. Specific Objectives**

1. To examine the effect of Service quality on customer satisfaction;
2. To explore the moderating role of perceived value in the relationship between service quality and customer satisfaction link;
3. To explore the moderating role of service failure in the relationship between service quality and customer satisfaction.

## **1.5. Significance of the Study**

The aim of this study is to examine the effect of service quality on customer satisfaction by incorporating perceived value and service failure as contingent variable. Service quality and customer satisfaction has been recognized as one of the important issues and generated a substantial amount of interest among managers and researchers. Service quality has been proposed as one of effective way for organizations to increase customer satisfaction and company performance. The study helps ethio telecom to identify its strength and weakness towards service quality and levels of customer satisfaction in order to improve its service quality and build its competences for the forthcoming competition. In addition, the study can be used as a baseline and serve as a secondary source of data for those who want to conduct further in-depth investigation in this area. Finally, although service quality and customer satisfaction extensively addressed by many scholars and practitioners, as to the researcher knowledge there are no studies in Ethiopia regarding the effect of service quality on customer satisfaction with moderating roles of perceived value and service failure.

## **1.6. Scope and Delimitations**

Scholars recommended longitudinal research design to make universal cause-effect relationship between these variables. However, due to time and financial constraints this research depends on the data collected only from Ethio telecom enterprise customers located in Addis Ababa in year 2019. Though there are many models for measuring service quality, for this study SERVPERF model of (Cronin & Taylor 1992) is selected on the appropriately selected service quality dimensions that are reliability, assurance, responsiveness, empathy and tangibles in relation to overall service quality and customer satisfaction. The research is limited to Ethio telecom broadband internet Key Account (KA) customers in Addis Ababa. The Key account customers includes Government organizations, Financial Institutions, Service Enterprises, Production Enterprises and International Organizations, NGOs and Embassies.

Although a number of other relevant factors could be possible moderators between service quality and customer satisfaction this study has focused only on two contingency variables that are critically relevant for Ethio telecom dissatisfied customers.

## **1.7. Limitations of the Study**

Empirical research in Service quality and customer satisfaction relationship with integrated moderating variables is limited. This puts a challenge in proceeding with this research smoothly. The general lack of sufficient demographic data and the inability to incorporate all broadband internet users in the other regions of the country due to time and other resource limitations.

## **1.8. Definition of Key Terms**

**Service Quality:** Excellence or superior service delivery process of the consumer expectations.

**Tangibles:** Physical facilities, equipment, appearance of personnel and communication materials.

**Reliability:** The ability to perform the promised service dependably and accurately

**Responsiveness:** The willingness to help customers and to provide prompt service.

**Assurance:** Knowledge and courtesy of employees and their ability to inspire trust and confidence.

**Empathy:** Caring and individualized attention that the firm (service provider) provides to its customers.

**Perceived Value:** as a trade-off between the benefits and sacrifices. It is the consumer's overall assessment of utility of product based on perceptions of what is received and what is given.

**Service Failure:** Service failure is any service-related mishaps that occur during a customer's experience with the firm. Proactive interaction is anticipating potentially problematic issues and acting prior to customer recognition or reaction to prevent service failures from occurring.

**Broadband:** Internet connection speed of 256 Kbps or higher. Broadband is critical technology that helps to boost the economy of countries in general and improves the lives of citizens in particular by facilitating the delivery of education, health and telecommunications services to a wider population with fair price.

**Customer Satisfaction:** Customer Satisfaction is feeling of pleasure or disappointment which resulted from comparing a product's or service's perceived performance or outcome against expectations

**SERVPERF:** Performance-based service quality model developed by (Cronin & Taylor, 1992) and used for measuring service quality.

### **1.9. Organization of the Thesis**

The study has five chapters with key contents as discussed in detail below:

**CHAPTER ONE:** Contains the introduction part including the background, research problem, objectives, scope and delimitations of the study.

**CHAPTER TWO:** this chapter reviews relevant literatures and provide definition of most important concepts, such as customer satisfaction, service quality, models of service quality, briefly explain perceived value and service failure theories, critically review both theoretical and empirical literatures in Service quality-customer satisfaction research area.

**CHAPTER THREE:** Describes the research design applied in this study specifically target population, sample size, sampling technique, data collection instruments, data collection process, the issue of reliability and validity, measurement of variables, method of data analysis.

**CHAPTER FOUR:** Reports on the results of the empirical data analyses. These include various analyses of the descriptive variables; several test results to establish reliability and validity, results of inferential analyses to show the relationship among variables. This chapter also presents detail discussions on the results of the data analyses with supports from existing literature where relevant.

**CHAPTER FIVE:** The chapter summarizes the major findings, give conclusions with recommendations and finally insight gaps for future researches.

## CHAPTER TWO

### REVIEW OF RELATED LITRATURES

#### 2.1. Theoretical Literature Review

##### 2.1.1. Concept of Service

Service is any activity or value that one party can offer to another which is essentially intangible and does not result in the ownership of anything (Kotler, et.al, 2012). Services broadly defined as acts, deeds, performances or effort that have different characteristics from goods.

According to Gronroos (2006), Service is a practice consisting of intangible activities that normally takes place in interaction between the customer and the service provider. Services are more or less subjectively experienced process where production and consumption activities take place simultaneously. Services are economic activities that create value and provide benefits for customers at specific times and places, as a result of bringing about a desired change in or on behalf of the recipient of the service.

Many Scholars agree on the following special characteristics of services that made them different from goods (Kotler & Keller 2012, Gronroos 2006).

**Service intangibility:** Services cannot be seen, tasted, felt, heard, or smelled as such they are more related to performances rather than objects.

**Service variability:** Service delivery can vary from provider to provider and customer to customer. Service provider and customer can affect the quality of services.

**Service inseparability:** Services are produced and consumed at the same time and cannot be separated. Production and consumption of services are inseparable. It is produced and consumed at the same time in the presence of the customer and the service producer.

**Service perishability:** Services cannot be stored for later sale or use.

### **2.1.2 Service Quality**

Service quality has got a great deal of contemplation from academicians and practitioners because of its strong correlation with customer satisfaction, financial performance, productivity (Negi, 2009). Service Quality is excellence or superior service delivery process of the consumer expectations (Zeithaml & Bitner, 1996). The common definition of service quality is the alteration between consumers' perceptions of the services delivered by a service firm and their expectations toward that service (Parasuraman et al., 1988; Gronroos, 1984). This definition was mostly referred by different scholars for defining service quality (Cronin and Taylor, 1992; Mestrovic, 2017; Ismail and Yunan, 2016; Iqbal et al., 2016; Ojo, 2010; Kaushal, 2016).

Expected service and perceived service are the key factors that affect the quality of services, if the service is received as expected then the service quality is good or satisfactory, but if the services received exceed the expectations service quality is very good or ideal and the customers will be very satisfied. Conversely, if the service received is lower than expected then the perceived poor quality of services. Service quality is based on the belief that consumers always have an expectation of such service, and this expectation may vary from country to country, culture to culture and person to person, which makes measuring service quality a challenging task. Quality of service will depend on how much the service provider's ability to consistently meet the needs and desires of consumers. There are two main aspects that describe and affect service quality the actual service customers expected (expected service) and services perceived (perceived service). Parasuraman, et al., (1985), explained that the creation of customer satisfaction for a service can be identified through a comparison between service perceptions with service expectation.

Parasuraman et al.(1985), Zeithaml et al. ,(1990), indicated that the key strategy for the success and survival of any business organization is the provision of quality services to customers. Expressly in the service industries, service quality has been recognized as critical for the success of organizations because of its close link with customer satisfaction (Parasuraman, Zeithaml & Berry, 1985).

There is a general agreement by researchers that the concepts of customer satisfaction and service quality are extremely interrelated. Although satisfaction and service quality are close in

meaning they are distinct. Perceived service quality was explained as a form of attitude and a long-run overall evaluation of a product or service, while customer satisfaction was considered as a transaction-specific evaluation. Parasuraman et al., (1985), suggested that benefits gained from creating and maintaining quality of service are greater than the cost to reach or as a result of poor quality. Superior service quality and consistency can lead to customer satisfaction which in turn will provide high company profit, customer loyalty, good word of mouth and better corporate reputation. The implication of these benefits is that each company must realize the strategic importance of quality, continuous quality improvement is not a cost but an investment to generate greater profits.

Table 2. 2 Definitions of Service Quality-Summary

No.	Service Quality	Authors
1	Service quality is a perceived judgment, resulting from an evaluation process where customers compare their expectations with the service they perceive to have received.	(Gronroos ,1984)
2	Perceived service quality is a global judgment, or attitude, relating to the superiority of the service	(Parasuraman et al.1988)
3	Service quality is a form of attitude representing a long-run overall evaluation	(Cronin and Taylor ,1992)
4	Service Quality is excellence or superior service delivery process of the consumer expectations.	(Zeithaml & Bitner ,1996)
5	service quality is the alteration between consumers’ perceptions of the services delivered by a service firm and their expectations toward that service	(Mestrovic,2017) (Ismail and Yunan, 2016)

*Source: own literature review*

### **2.1.3. Concept of Customer Satisfaction**

Customer satisfaction is the most prevalent concept that has got much attention and interest from different scholars and practitioners because of its importance as basic element of business strategy, productivity and achievements (Anderson, Rust and Fornell, 1997). Customer satisfaction is not an end by itself but it is an antecedent of business profitability, company

performance, customer loyalty, and customer retention and the key to achieve business objectives and goal (Kotler & Keller, 2012). Customers satisfaction has emerged as a key construct for a firm's success and long-term competitiveness (Ojo, 2010)

In spite of the widespread recognition attached to customer satisfaction, researchers have not yet agreed on one global definition for it. Homburg. C, (2009), expressed that customer behaviors and attitudes are greatly influenced by demographic, situational, environmental and psychological factors and these factors can be used by companies and policy makers to develop strategies to meet different needs of the different customer segments.

Giese & Cote, (2000), argued that consumer satisfaction encompasses three basic components type of response, the center of interest or the subject on which the response is focused and the moment in time at which the evaluation is made. The focus of much of the research is on the disconfirmation of expectations theory which explains that the customer is satisfied when he or she feels that the product's performance is equal to or more than what was expected (confirmation). But if perceived performance falls short of customer expectations (disconfirmation), then the customer is dissatisfied (Oliver, 1980). It is consumer's judgments regarding a firm's success or failure in meeting expectations, with met expectations resulting in satisfaction and unmet expectations resulting in dissatisfaction (Oliver, 1980).

Parasuraman, Zeithaml, Berry, (1990), proposed that the concept of satisfaction could be equated to the gap between real-life experiences and expectations.

Hokanson, (1995), focuses on different factors affecting customer satisfaction responsive employees, well-mannered employees, educated employees, cooperative employees, correctness of billing, billing relevance, competitive pricing, service feature, superior value, billing transparency and fast service. Alternative options and products/services available for a customer may create differences in satisfaction level.

Rust & Oliver, (1994), advocate that customer satisfaction or dissatisfaction arises as a response to a single or prolonged set of service encounters. Enhancing the customer satisfaction leads to improved profits, positive word-of-mouth, retained or gained market share, and reduce marketing expenditures.

In conflict with the traditional concept of consumer satisfaction (Agarwal, Signal, 2013) states that customer satisfaction is an output, resulting from the customer's pre -purchase comparison of expected performance with perceived actual performance and incurred cost.

The strategic component of customer satisfaction is customer expectations. This component is very important and may compel a customer to have positive or negative feelings towards a particular product or service. Positive expectations show that a customer will be connected or attached emotionally with the product or service and negative expectations will repel the customer. If the relationship is negative, more chances of switch the customer to another supplier (Fraering & Minor, 2013). Satisfaction is the awareness of each person separately. These feelings plagiaristic bycomparing expected service with perceived service (Ratanavaraha et al., 2016). Customer satisfaction is individual person reaction toward particular product when compare the performance of the product with any person expectation (Leong, Hew, Lee, & Ooi, 2015). Customer satisfaction considered psychosomatic state reaction of customer when its emotion about expectations notpositive in near future (Chang, 2015).

Table 2. 1 Definitions of Customer Satisfaction-Summary

No.	Definitions	Authors
1	Confirmation/disconfirmation expectation ; the customer is satisfied when there is a feeling that the product's performance is equal to or more than what was expected (confirmation)	(Oliver, 1997)
2	Post consumption" experience which compares perceived quality with expected quality	(Anderson and Fornell, 1994; Parasuraman et al., 1985)
3	Equating the gap between real-life experiences and expectations	(Parasuraman, Zeithaml and Berry ,1990)
4	It is component of type of response, center of interest or the response focus , the moment in time at which the evaluation is made	(Giese & Cote ,2000)

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5	Customer Satisfaction is feeling of pleasure or disappointment which resulted from comparing a product's or service's perceived performance or outcome against expectations	(Philip Kotler , 2012)
6	Customer satisfaction is an output, resulting from the customer's pre purchase comparison of expected performance with perceived actual performance and incurred cost.	(Agarwal, Singhal, 2013)
7	Customer satisfaction is individual person reaction toward particular product when compare the performance of the product with any person expectation	(Leong, Hew, Lee, & Ooi, 2015)
8	Satisfaction is the awareness of each person separately. These feelings plagiaristic bycomparing expected service with perceived service	(Ratanavaraha et al., 2016)

*Source; own literature review*

#### **2.1.4. Determinants of Customer Satisfaction**

Customer Satisfaction is determined by a lot of factors service quality, perceived price, perceived value (Kotler & Keller, 2012). The service encounter and or service process that creates customers cognitive, emotional and behavioral responses which results in the mental mark a memory (Gronroos, 2005). However recent empirical studies have shown that customer satisfaction is not only driven by cognitive dimensions of customer perceptions of service quality but also affective dimensions which have post purchase behavior like repeated purchase, customers loyalty, switching intention and likelihood to recommend (Homburg & Giering, 2001). In addition, important determinant of customer satisfaction includes but not limited to Service quality, service recovery, reputation, service price, customer orientation (Oliver, 1980)

### **2.1.5. Models of measuring Service Quality**

In this section, the four main, widely used and accepted service quality models in field of service quality measurement is evaluated. Strengths and weaknesses of each model is discussed in order to identify the appropriate model fit of service quality measurement. Evaluating and better understanding of the various service quality measurements would enable organizations to identify strengths and weaknesses, to efficiently design the service delivery process, to allocate resources and to provide better service. Several scholars, such as (Gronroos,1984, Parasuraman et al. ,1985, 1988), and (Cronin Jr. & Taylor,1992) have been dedicated to realize the dimension and background of service quality measurement.

### **2.1.6. Nordic Model; The Grönroos service quality model**

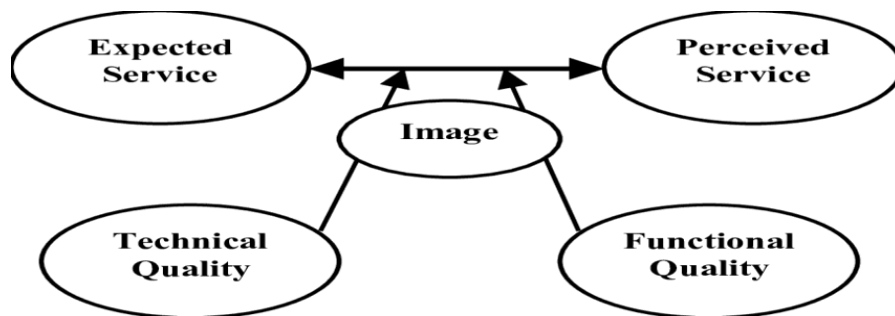
Service quality was primarily conceptualized by Gronroos, the Nordic School of service marketing in 1982. This model has three dimensions of service quality technical quality, functional quality, and image. Technical or outcome (what consumer receive) and functional or process related (how consumer receive the service). Image build up by technical and functional quality and effect of some other factors (marketing communication, word of mouth, tradition, ideology, customer needs and pricing).

**Technical quality (or outcome)** dimension refers to what the customers receive in their interactions with the service organization which can be measured by the consumer in a rather objective manner. Moreover, consumers will also be influenced by the way in which technical quality is transferred to them. Technical quality of telecommunications includes, network transmission quality, network through rate, billing accuracy rate and network reliability.

**Functional quality (or process)** It refers to how the customers receive a service (the outcome) and how the simultaneous production and consumption process is experienced. Therefore, it is the more subjective dimension of the two. In telecommunications, functional quality includes convenience and quickness to accept the customer service requests, business proficiency, and transparent telecommunications charges, warm and considerate service.

**Image:** It is the customer view of corporate brand and the company image is expected to build up by technical and functional quality of previous performance of the firm.

Nordic model is based on disconfirmation paradigm by relating perceived performance and expected service, this was the first attempt of real model to measure quality of service. Gronroos model was general and without offering any technique on measuring technical and functional quality. Rust & Oliver, (1994), tried to improve the Nordic model by the Three-Component Model. They propose three components: service product (i.e., technical quality), service delivery (i.e., functional quality), and service environment but they did not test their model and just a few support have been found.



Source: Gronroos. (1982)

Figure 2.1 Nordic/ Gronroos Service Quality Model

### 2.1.7. The ‘Gaps’ model of service quality

(Parasuraman et al.,1985) proposed the ‘Gaps’ model in 1985. The model is developed on research conducted on executives from four different service firms and a sample of consumer focus groups. Their research revealed that gaps exist between what management perceives service quality is and what consumers perceive. The model has five gaps, which were considered to be the main reasons why service providers fail to satisfy or meet customers’ expectation of service quality. Disconfirmation model is based on product quality literature which is the base of service quality and based on disconfirmation model, (Parasuraman, Zeithaml, & Berry,1985) suggested a new model for service quality measurement by measuring the gap between perceived service and expected service The five gaps are discussed below:

**Gap 1: The gap between consumer expectation and management perception:** this gap occurs when management fails to understand what customers want in terms of desirable service quality.

As a result, the provided service can't satisfy customer's expectation which will negatively impact on the customer's evaluation of service quality.

**Gap 2: The gap between management perception and service quality specification:** - this gap is the difference between management perceptions of consumer expectations and the translation of these perceptions into service-quality specifications. This gap occurs when service enterprises find themselves unable to match or exceed consumer expectations, either as a result of not being able to perceive consumers service quality expectations, or the absence of total management commitment to service quality.

**Gap 3: The gap between service quality specification and service delivery:** -this gap represents the difference between the service actually delivered by frontline service personnel on a day-to-day basis and the specifications set by management. The importance of the contact personnel and the influence they have on the service quality perceptions of consumers cannot be underestimated in the service delivery process.

**Gap 4: The gap between service delivery and external communication:** - this gap is the difference between service delivery and what is promised in external communications to consumers. If the external communications of a service, such as advertisement, promise more than it can actually deliver, the enterprise may raise expectations initially, but perceptions of service quality will be lowered when promises are not fulfilled.

**Gap 5: The gap between expected service and experienced service:** - this Gap represents the difference between customer expectations and perceptions (that is, perceived service quality). Evaluations of service quality depend on how consumers perceive the actual service performance based on their prior expectations.

According to Parasuraman et al. (1985), Gap 5 is influenced by Gaps 1 to 4, which are all within the control of an organization and therefore need to be analyzed to identify any changes that should be implemented to reduce or eliminate Gap 5.  $GAP5 = f(Gap1, GAP2, GAP3, GAP4)$

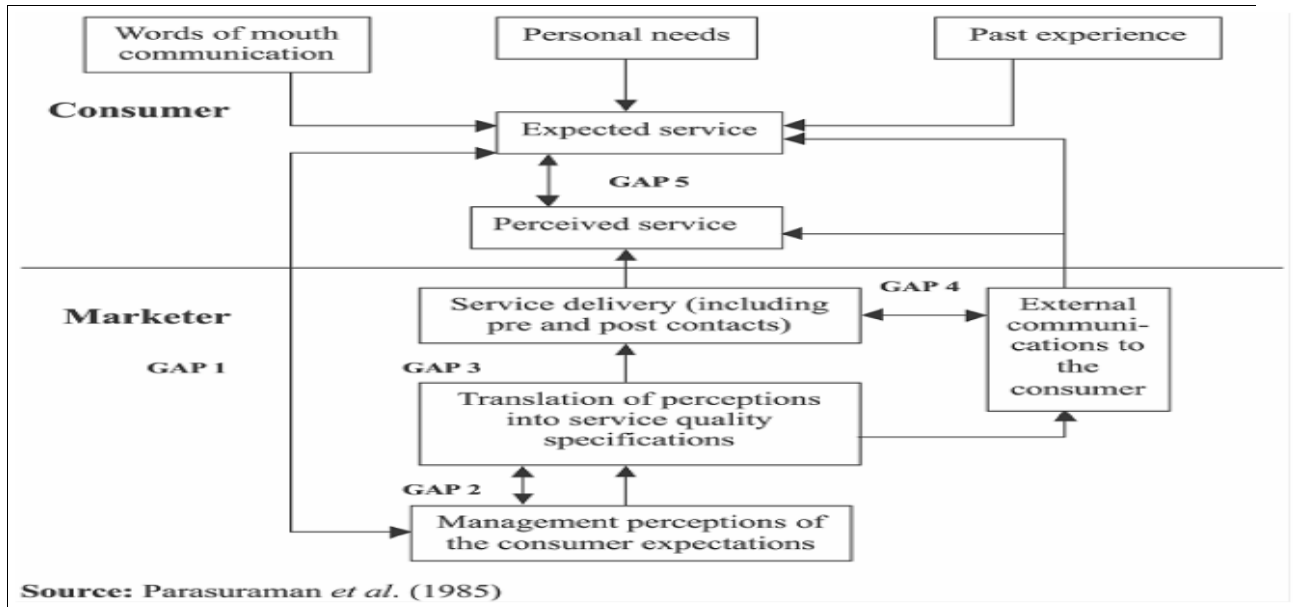


Figure 2.2 Parasuraman Gap Model

Parasuraman et al.,(1985), developed a conceptual model to identify the main components of perceived service quality by isolating Gap 5 from the “Gaps” model of service quality. The authors concluded that customers, regardless of the service type, evaluated service quality by measuring expectations and perceptions. Customers build their expectation of service based on word-of-mouth, external communication, personal needs, and experience. Based on the gap between expectations and perceptions of the consumers, (Parasuraman et al.,1985) suggested ten (10) dimensions initially consisted of a set of 97 items for measuring the gaps in service quality model; Reliability, Responsiveness, Competence, Access, Courtesy, Communication, Credibility, Security, Understanding, and Tangibles. The items related to the ten dimensions were separated into two phases, i.e., the first grouped the items that assessed customer expectations regarding the provision of services and the second grouped the items that assessed customer perception about the provision of the services.

### 2.1.8. SERVQUAL Model

In 1988 the authors refined the Gap model into five dimensions Reliability, Responsiveness, Assurance (which contains communication, competence, credibility, courtesy, and security). Tangibles, and Empathy (which contains access and understanding) while keeping the construction of the model and theory the same and rename the as SERVQUAL. This way,

Parasuraman et al. (1988), defines the quality of services as a difference between customer expectations and the perception. Thus, the SERVQUAL instrument appears in an examination whose aim was to create an instrument to assess the quality of services.

Later, due to various statistical changes in the SERVQUAL instrument, the 97 items became 22, while the ten dimensions were regrouped into five final dimensions which are stated above. Since the authors operationalized service quality as being a gap between customer's expectations and perceptions of performance on these variables, the service quality measurement scale is comprised of a total of 44 items (22 for expectations and 22 for perceptions)

Likert scale, from 1 (strongly disagree) to 7 (strongly agree) and are compared to arrive at (Perception-Expectation) gap scores. The higher (more positive) the perception minus expectation scores, the higher is to be the level of perceived service quality, and vice versa. (Parasuraman et al.,1988) noted that organizational leaders should minimize the gap to maintain overall service quality and satisfaction.

**Tangibles** can be illustrated as the appearance of physical offices, equipment, work force, and correspondence materials. Parasuraman et al.,(1985) tangibility can be characterized as the presence of physical offices, staff, and equipment and composed materials.

**Reliability** is defined as capacity to execute the guaranteed benefit reliably and precisely (Armstrong, 2012). If a company is providing a good service, a company and its staff should be ready to respond to consumer's queries about products and services offered (Ojo, 2010). Timely responses to requests, is one of the important customer's expectation. Therefore, this should not be delayed or ignored simply because these are fundamental issues. Online support is offer by some companies that provides customers with instant resolution to their queries.

**Responsiveness** characterized as the readiness or willingness of workers to give benefit or immediate response to the customer need. Offer quick service and willingness to give assistance to the customers (Armstrong, 2012). Customers highly appreciates to provide service in a timely manner, this aspect should be understood by the good service providers (Ahmed et al., 2010).

**Assurance** is basically courtesy, competence, credibility; security of the firm employees gives to its customer. Parasuraman et al., (1985), interpreted (AS) as information to have cordiality of

workers and their capability to motivate confidence and trust. If company’s representatives provide genuine and caring service, customers would want to do business (Zakary & Angelova, 2011).

**Empathy** can be interpreted as the care, individualized concentration the company provides to its customers (Armstrong, 2012). Customer and employee interactions are reflected through the dimension of empathy (Armstrong, 2012) to attract customers through caring is a key determinant and by providing variety in the features of service products that will fulfill their wants and need in the marketplace.

Table 2.3 SERVQUAL Dimensions

No	Dimensions	Definitions
1	Tangibles	The appearance of physical facilities, equipment, personnel and communication materials
2	Reliability	The ability to perform the promised service dependably and accurately
3	Responsiveness	The willingness to help customers and to provide prompt service
4	Assurance	The knowledge and courtesy of employees and their ability to convey trust and confidence
5	Empathy	The provision of caring, individualized attention to customers

*Source; own literature review*

Although SERVQUAL is the most famous model in service quality after years of researching in this model, scientists noted that the method offered in this model for measuring gaps in different levels is not clear (Brady & Cronin, 2001a; Seth et al., 2005). Some researchers believe that measuring the gap between expectation and perception is not psychometrically able to obtain superior assessment of service quality (Brady & Cronin, 2001a)

### **2.1.9. Performance only model of Cronin and Taylor (SERVPERF)**

Cronin & Taylor (1992), developed a performance-based service quality measurement instrument called SERVPERF. The model is based on the theory that service quality is a measure of customer attitude towards performance received. Cronin & Taylor (1992), questioned the conceptualization of service quality by (Parasuraman, et al; 1988) as a form of attitude related but not equivalent to satisfaction and operationalization as different between customers' expectation and perceptions the actual service delivered. They thought the conceptualization of service quality by Parasuraman, Zeithaml & Berry is confusing with customer satisfaction. They argued SERVQUAL is inappropriately based on an expectations disconfirmation paradigm rather than an attitudinal model. They, therefore, suggested that the adequacy importance model of attitude measurement should be adopted for Service Quality. They conceptualized service quality as an attitude reflecting long-term perceptions of a service firm's superiority or excellence and operationalized as consumers' perceptions of service firm performance. Cronin & Taylor (1992) also questioned the need to measure expectations or calculate a gap score. They think that measuring expectations is unnecessary since measuring service performance or customer's perceptions is enough to measure service quality. Consumers rate their perception of a particular service by comparing their expectations with their actual experience by making the calculation in their mind.

Cronin & Taylor, (1992), developed SERVPERF model to provide an alternative method of measuring perceived quality. They argue that current performance best reflects a customer's perception of service quality therefore perception scores alone can better predict overall service quality than perception minus expectation scores as administered by SERVQUAL instrument.

SERVQUAL scale employs a lengthy questionnaire to collect data about consumers' expectations as well as perceptions of a firm's performance using a total of 44 questions which is time consuming to answer. SERVPERF is efficient in comparison with the SERVQUAL scale; it reduces the number of items by 50% (44 items to 22 items) (Tyler, 1992). It also reduces the difficulty of administration of expectation and perception versions of SERVQUAL. SERVPERF model bases on the consumers' perception of service performance. It is the performance component of the Service Quality scale (SERVQUAL) that comprises 22 perception items of

SERVQUAL scale by discarding the expectation component. Expectations are not part of SERVPERF as it does not give any consideration to expectation.

**2.1.10. Hierarchical model**

In 2001 Brady and Cronin, advocated a new model by combining four models. They improved SERVQUAL (Parasuraman, et al., 1988) by specifying what needed to be reliable, responsive, empathic, assured and tangible. Brady and Cronin adopted service quality perception based on evaluation by customer in three dimensions, Interaction Quality (i.e., functional quality), Physical Environment Quality and Outcome Quality (i.e., technical quality) (Gronroos, 1984; Rust & Oliver, 1994). In addition, they accept multilevel service quality perceptions and multidimensional (Dabholkar, et al., 1996). Service quality has three primary level dimensions in this conceptualization such as interaction, environment and outcome with three sub dimensions for each one: Interaction (Attitude – Behavior – Expertise), Environment (Ambient Conditions – Design – Social Factors), and Outcome (Waiting Time – Tangibles – Valence. A new model conceptualized by this hierarchical model and SERVQUAL factors specified into sub dimensions. Brady and Cronin have improved service quality framework and solved the stalemate in this theory. It defines service quality perception and a clear form of service quality measurement. In SERVQUAL measurement, service outcomes were not clearly considered, but Brady & Cronin’s model seems to fill this void.

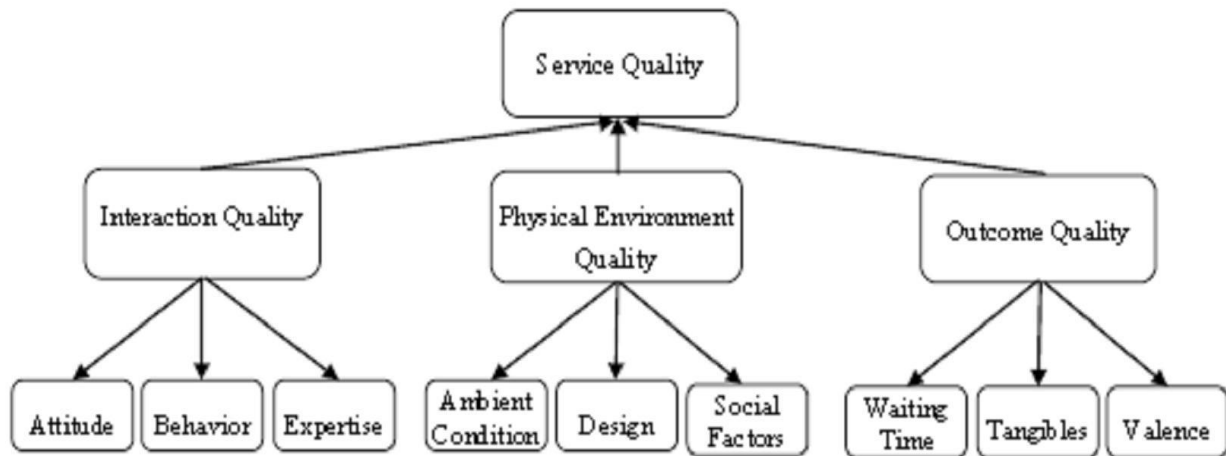


Figure 2.3 Hierarchical Service Quality Model

Table 2. 4 Service Quality Model-Summary

No.	Models	Concept	Key for the study	Authors
1	Nordic –Gronroos model	Technical quality, Functional quality and image	It is not be used for this study as it lacks technical measurements	(Gronroos,1984)
2	SERVQUAL	Performance minus Expectation	Measurement is too long and not used in this study	(Parasuraman et al. 1988)
3	SERVPERF- Performance model	Performance only	As it is performance measurement only and efficient it is used in this study.	(Cronin Jr. & Taylor,1992)
4	Hierarchical model	Interaction quality, physical quality and outcome quality	It lacks measurements for technique quality taken from Nordic and not used.	(Brady & Cronin,2001)

*Source; own literature review*

### 2.1.11. Theoretical background of Perceived Value

#### Perceived Value

Perceived value has been acknowledged as a difficult concept to define and measure (Holbrook, 1999; Woodruff, 1997; Zeithaml, 1988;). Most of the studies define perceived value as a trade-off between the benefits and sacrifices (Zeithaml, 1988) mentioning that perceived value can be considered as the outcomes or the benefits customers gain relative to the total costs customers pay. Holbrook, (1999), emphasizes that consumer value is the transaction between customer and the product from which value results, consumer value consists of eight components; efficiency, excellence, play, aesthetics, politics, morality, self-esteem, and spirituality. Zeithaml (1988), defined consumer's perception of value as the following four concepts. Value is a low price; Value is whatever I want in a product; value is the quality I get for the price I pay; and finally, value is what I get for what I give. Zeithaml also expressed the four definitions by combining them into an aggregate definition: perceived value is the consumer's overall assessment of utility of product based on perceptions of what is received and what is scarified (Zeithaml, 1988). However, the sacrifice means more than the money paid for a certain good or service. Non-

monetary costs, such as transaction cost, search cost, opportunity cost, risk for weak performance, negotiation cost, and time incurred during the purchase, should also be included (Zeithaml, 1988). Thus, in order to determine the consumer to purchase particular services or to buy again specific products, services have to be delivered with value, either by incorporating benefits or by reducing sacrifices.

### **Dimensions of Consumer Perceived Value**

#### **Value Hierarchy Model / Means to End Approach**

The Value hierarchy model conceptualize value into three hierarchy levels which are desired attributes, desired consequences, and desired end-states or goal and purposes, in which the lower levels are the means by which the higher level ends are achieved. In this model, (Woodruff ,1997) defined perceived value as customers perceived preference for an evaluation of those product attributes, attribute performances, and consequences arising from use that facilitate (or block) achieving the customers' goals and purpose in use situations. The customer may either use their goal to attach and evaluate the preference attribute and attribute performance (moving down hierarchy), or think the product or the service as a bundle of attributes then form the certain attribute based on their ability to facilitate the desired consequences that help them to achieve goals and purposes. Woodruff argues that this hierarchy model helps manager to specify exactly what managers should learn about their customer. This model looks beyond the attribute-based key buying criteria, in which it involves the consequences in use situation that the seller should learn and the goals to which those consequences lead. The dynamic concept of perceived value proposed by (Woodruff, 1997) is commendable in explaining the complexity of perceived value as well as has successfully helped to explain why customer attach different weights to various benefits in evaluating alternative product / service (Khalifa, 2004).

#### **Utilitarian and Hedonic Model**

Holbrook & Hirschman,(1982), had a notion that value should not only viewed from utilitarian perspective in which the product is valued based on its performance or functions, but also include the experiential perspective in which the product is valued based on the experience or the feeling arouse from consumption, including the symbolic and hedonic aspect. Consequently, the

utilitarian and hedonic model was proposed and has given big contribution on perceived value concept. By dichotomizing value into utilitarian and hedonic value, it will help the other researchers to view value in better perspective. This dichotomization of value has been considered as the basis conceptualization of value in multi-dimensional approach (Sanchez-Fernandez & Iniesta-Bonillo, 2007) in which many other dimensions of value have been proposed based on this perspective.

### **Consumption Value Theory**

Underlying from the utilitarian and hedonic perspective, the broader theoretical framework of perceived value has been developed by (Sheth et al., 1991) and value is based on the customer decision or choice whether to buy or not to buy, to choose between two products or to choose one particular brand over another. Five dimensions of value namely functional value which is related to the utilitarian or functional purpose of the product, social value which is related to the image obtained from the society, emotional value which is related to the feeling arouse from using the product, epistemic value which is related to the curiosity or desire for knowledge or novelty seeking, and conditional value which is derived due to specific situation or circumstances that faced by the consumers.

This model surely helps to understand the value in much easier than other concepts proposed as the organization can easily delve the component of value by referring to its source or dimensions. Compared to the utilitarian and hedonic value, the dimension suggested in consumption value theory was more complex which include the variety of fields such as social, economic, and clinical aspect (Sweeney & Soutar, 2001).

### **Holbrook Typology of Consumer Value**

According to Holbrook (1996), perceived value can be defined as an interactive relativistic preference experience. By interactive meant that value entails the relationship between the customer and the product, it is comparative, subjective, and specific to the context. Customer perceived the value not in the purchase stage however during the consumption stage. Framework for the three key dimension of value are 1) extrinsic versus intrinsic, 2) self-oriented versus other-oriented and 3) active versus reactive. Based on these dichotomizations he proposed eight

dimensions of consumer value namely efficiency value, play value, excellence value, aesthetic value, status value, ethics value, esteem value, and spirituality value. He argued that each dimensions are interrelated to each other.

Undid & Bilkis, (2012) Value judgments of customers have influence on satisfaction, and perceived value is considered as a powerful measure of customer satisfaction and post-purchase intentions and recently marketing managers and researchers are focusing more on value judgments of customers. Perceived value has become an important criterion in the development of managerial strategies to create, communicate, and deliver value to the customer (Kotler & Keller, 2012). It plays an important role in the assessment of service quality, customer satisfaction, and behavioral intention (Dodd et al., 1991).

In this study, perceived value is the evaluation of the quality, benefits of ethioteleom broadband service by customers based on their advance sacrifices and exposit perceived performance. Perceived value was measured by three-item measures adapted from (Cronin et al., 2000), (Tung, 2004), (Wang et al., 2000)

### **2.1.12. Theoretical background of Service Failure**

Service failure is any service-related mishaps or problems (real and/or perceived) that occur during a consumer's experience with the firm." (Maxhax, 2001, p. 11) Core service failures include all critical incidents that were due to mistakes or other technical problems with the service itself. These includes network failure, billing errors, service mistakes, and service catastrophes. Core service mistakes included longitudinal problems, in which a series of mistakes or decreases in levels of service occurred over time.

Although services marketing research continues to be largely focused on firms' reactive interactions for recovering from service failure (Van Vaerenbergh et al., 2014), studies indicate that service organizations efforts to improve service experiences by proactively preparing customers for the adverse effects of service failure are favorably received (Mikolon et al., 2015; Parasuraman et al., 1991). Thus, service organizations can provide customers with superior service by placing more emphasis on proactive interaction. Proactive interaction is anticipating potentially problematic issues and acting prior to customer recognition or reaction to prevent

service failures from occurring. Proactive interaction begins with a firm's voluntary initiation of customer contact while reactive interaction only occurs when a customer seeks assistance or brings a problematic issue to the firm's attention. A firm employing proactive interaction focuses on anticipating future events by learning from mistakes and by predicting potential failures and taking preventive initiative to change or control future outcomes. In order to do this, the service provider firm anticipates and understands potential difficulties customers may experience, informs customers about likely problems, and offers assistance before the customer encounters trouble and has to contact the firm for a solution. In contrast, reactive interaction merely entails responding to customer complaints or requests for assistance. Thus, proactive interaction offers faster service, quicker problem resolution and inherently affects a broader range of customers than reactive interaction (Challagalla et al., 2009; Mouawad & Kleiner, 1996).

### **Telecommunication network Failure Recovery**

Telecommunications network failures or unexpected equipment faults or breakdown affect lot of customers' day to day transaction and the telecom revenue. Although there's no denying that ensuring speedy repairs is extremely important as soon as a fault is detected, working reactively to these issues can be incredibly costly with time, money and customer. Reactive network maintenance usually occurs when the right steps haven't been taken to ensure preventative and predictive maintenance. (Robert, 2005)

Proactive maintenance and network management keeps equipment serviced and in working order by monitoring, predicting and solving faults before they occur. An effective proactive maintenance program can preserve equipment, keeping it in the best possible condition and making unexpected failures happen rarely. Choosing a reactive approach to network maintenance can hinder an organization and dissatisfy customers because they are unforeseen, meaning they are likely to be more complex problems to solve (Taylor k) Whereas a proactive approach can ensure that maintenance remains simple and straight forward. The key is minimizing service failures occurrences by proactively assessing telecom network. This can be achieved by using network software to monitor any faults or points of weakness within the network that may need to be repaired or replaced. Proactive maintenance will significantly extend the life of

telecommunication networks, increase total lifetime value and minimize the occurrence of major repairs and downtime.

Sometimes being reactive is the only option. There is no hiding the fact that sometimes, no matter how proactive a network provider is in assessing and monitoring the network, faults will happen out of the blue and in these instances, the fastest recovery should be implemented.

### **Predictive vs Preventative Maintenance**

Predictive maintenance predicts equipment failure before it occurs, allowing network providers to take the appropriate action before failure happens. Predictive maintenance is a non-invasive task that is meant to determine the condition of equipment through direct monitoring and analysis. Maintenance tasks can then be planned and scheduled accordingly.

Preventative maintenance tasks are designed to renew an asset and eliminate deterioration in the equipment before it occurs. Performing preventative maintenance will mean the parts are kept in as close to new condition for as long as possible. By carefully keeping record of the parts that are used, costs, time spent on maintenance etc. a clear and simple process can be followed in order to maintain the network. This will also allow the telecom company to review scheduled maintenance, identify any reoccurring issues and evaluate opportunities to improve the network (Robert W 2005)

To ensure that network continues to run as smoothly as possible with minimal downtime and that network processes aren't slowed or halted due to faulty equipment, network problems preventive and predictive maintenance must be implemented.

Table 2.5 Theoretical Bases of Perceived Value and Service Failures

Theory	Authors	Authors
Value Hierarchy Model / Means to End	The Value hierarchy model conceptualize value into three hierarchy levels which are desired attributes, desired consequences, and desired end-states or goal and purposes, in which the lower levels are the means by which the higher level ends are achieved	(Woodruff 1997)
Utilitarian and Hedonic Model	In addition to performance or functions, value should include the experiential perspective in which the product or service is valued based on the experience or the feeling arouse from consumption, including the symbolic and hedonic aspect	(Holbrook & Hirschman ,1982)
Consumption Value theory	Decision to buy or not buy based on functional value, social value, emotional value, epistemic and conditional value.	(Sheth et al. ,1991a; 1991b)
Holbrook Typology of Consumer Value	Extrinsic versus intrinsic, self-oriented versus other-oriented and active versus reactive	(Holbrook, 1999)
Proactive interaction	Proactive interaction is anticipating potentially problematic issues and acting prior to customer recognition or reaction to prevent service failures from occurring.	(Challagalla et al., 2009; Mouawad & Kleiner, 1996)
Reactive Interaction	Reactive interaction merely entails responding to customer complaints or requests for assistance.	(Challagalla et al., 2009)

Source; own literature review

### 2.1.13. Moderators on Service quality and customer satisfaction relationship

Effect of Service quality on customer satisfaction varies across different types of factors. A thorough investigation of such relationships reveals that the effect of service quality features on customer satisfaction is not consistent if perceived value is present in organizations (Caruana al., 2000; Varki & Colgate, 2001). Perceived value is considered as customer recognition and appreciation on the utility of a product that is given by a service provider which may fulfil

customers' expectation (Foster, 2004; Heininen, 2004; Walker et al., 2006). The relationship is, therefore, contingent on other variables.

Other literature indicated that customer satisfaction could be improved when key variables like service failures are correctly aligned (Walfried M., 2000). This is the basic premise of contingency theory, which suggests that congruence or alignment among key variables are critical for obtaining optimal customer satisfaction.

Perceived value plays a moderating role in the relation of service quality and satisfaction. Several researchers agree to the combined effects of perceived value and quality on satisfaction (Caruana, Money, Berthon, 1998; Ryu & Han, 2010). Caruana et al.,(2000) examined that perceived value has a significant moderating effect on the relationship between service quality and customer satisfaction. A deeper understanding of the interactions among service quality, satisfaction and value should go a long way in enabling more effective management in the service sector. Although subjective, these constructs play a significant role in determining customer choices, their decisions to deepen or terminate a relationship and therefore customer retention and long-term profitability.

Service failure the occurrence of an unsatisfactory service encounter i.e. service failure is thought to moderate the quality/satisfaction relationship. There is much support for this proposition in the services literature, as service failure is known to have a potentially powerful effect on consumers (Zeithaml et al., 1994; Zeithaml et al., 1990).

According to Bitner et al.'s (1990), incident sorting process, the first and most fundamental issue in identifying critical service encounters is to determine whether or not there is a service delivery system failure. Service failure appears to be a significant variable in terms of understanding the service delivery process, and has yet to be tested in terms of its moderating effects on the service quality and customer satisfaction. (Jeremiah, Ojera, Ochieng, 2015) Positive relationship between service quality and customer satisfaction moderated by service failure, and that service quality is a predictor variable which operates well if aligned with service failure to better influence customer satisfaction.

Ethio telecom service quality is strongly criticized by enterprise customers that have lot of experience abroad and familiarity with overseas telecom service quality. Particularly lack of proactive recovery and compensation for inaccessibility, interruption, congestions of broadband services are the main issues in relation to their day-to-day business transaction. In addition, inaccessibility of broadband services based on the subscription or price paid to the company is the other argument they mostly raised. Hence, integrating perceived value and service failures as moderator variable will make service quality and customer satisfaction of Ethio telecom stronger.

Table 2.6 Moderators between Service Quality and Customer Satisfaction

Moderator	Authors	Authors
Perceived Value	The interaction's indicated that as perceived value increases the association between service quality and customer satisfaction strengthens	(Caruana,Money,Berthon,2000) (Ismail,Abdullah,Parasuraman,2009) (Hyung Seok Lee, 2013)
Service Failure	As service failure incidents increase the satisfaction level of customers' decrease. Service failure encounters influences customer satisfaction level negatively.	(Walfried M. Chris Robert D ,2000) (Jeremiah, Ojera, Ochieng ,2015)
Perceived Price	The interaction of service quality and perceived price significantly influenced customer satisfaction	(Hyung Seok Lee ,2013)
Switching cost	The interaction of customer satisfaction and perceived switching cost significantly affected customer loyalty	(Hyung Seok Lee ,2013)
Communication	The type of communication between service provider and consumer influences the relationship between service quality and customer satisfaction.	(Walfried M. Chris Robert D ,2000)
Gender	Gender moderates the relation between service quality and customer satisfaction.	(Omar, Arfin, Ahmed ,2015)

Source: own literature review

## **2.2. Empirical Literature Review**

### **2.2.1. Universal Service quality – Customer satisfaction Relationship**

Service quality is an important tool to measure customer satisfaction and there is a close relationship between service quality and customer satisfaction. Wang & Lo (2002), in the study of china 's telecommunication industry found that service quality has positive or negative influence on customer satisfaction. Ahmed et al., (2010), in the study effect of Service quality on customers' satisfaction in telecom sector found that service quality has a significant relationship with the satisfaction of customers. Many authors like (Kadir et al., 2011) and others who studied the relationship between perceived service quality and customer satisfaction have shown that service quality determines customer satisfaction. Recently (Brady et al. 2005; Bei & Chiao 2006; Liu et al. 2011; Saghier 2013; Androniceanu, 2017) studies also show a positive effect of service quality on customer satisfaction.

However, although much has been written on the relationship between service quality and customer satisfaction earlier in 2000 (Caruana, Money & Berthon, 2000) found that customers who believe that the service provider provides high levels of service quality does not mean they will be highly satisfied. In other words, satisfaction does not depend on service quality alone and higher levels of quality are worthwhile to the extent that customers believe that value is being enhances. These literatures clearly indicate that there is a considerable variation in the reported relationships between Service quality and customer satisfaction. The reasons for variation in results can be attributed to factors like difference in the scales of service quality being used, difference in methodology being adopted, opinion regarding moderating variables and different indicator components of customer satisfaction being measured.

### **2.2.2. Service quality and Customer Satisfaction relationship with moderating variables/Contingency approach/**

Recent scholars revealed that the relationship between service quality and customer satisfaction is moderated by different factors like perceived value, perceived price, communication, switching cost, service failure, gender, education, culture, reputation and other factors as well. Caruana, Money & Berthon, (2000), examined that perceived value has a significant moderating effect on the relationship between service quality and customer satisfaction. That is, the

interaction between service quality and perceived value explained more of the variance in satisfaction than the direct influence of either service quality or perceived value on customer satisfaction.

Ismail & Alli, Abdullah, Parasuraman, (2009), confirmed that perceived value does act as a partial moderating role in the service quality model of the organization and they suggest that current research and practice within service quality models needs to consider individuals' perceived value as a critical aspect of service quality. Perceived value should be seen as a crucial aspect of service quality where perceived value about service quality may strongly induce positive subsequent personal outcomes satisfaction, retention and loyalty.

Hyung Seok Lee, (2013) verified the moderating effect of perceived value, perceived price and switching costs on the interaction of service quality and customer satisfaction. The moderating effect demonstrated that the interaction of service quality and perceived value significantly affect customer satisfaction. The interaction's indicated that as perceived value increases the association between service quality and customer satisfaction strengthens. Considering the roles of perceived value in the relationship between service quality and customer satisfaction is better to improve customer satisfaction. The interaction of service quality and perceived price significantly influenced customer satisfaction. The interaction's indicated that as perceived price increases, the relationship between service quality and customer satisfaction strengthens. The interaction of customer satisfaction and perceived switching cost significantly affected customer loyalty. The interaction's indicated that as perceived switching cost increases, the association between customer satisfaction and customer loyalty strengthens. (Parasuraman et al.,1985) conceptual service quality model highlights that matching between service quality standards and customers' standards may decrease service performance gap and increase customers' perceived value about the quality systems consequently, it may lead to higher customer satisfaction.

Jeremiah, Ojera, Ochieng (2015), found the moderating effect of service failure on the relationship between service quality and customer satisfaction. The study made a major milestone towards bringing clarity on the interrelationship between service quality and customer satisfaction through a moderator investigation. The study therefore concluded that moderating effect of service failure which improves the model's goodness of fit is statistically evident. This

implies that as service failure encounters increases the satisfaction level of customers' decreases. In other words, service failure encounters influences customer satisfaction level negatively. The explanatory power of service quality on quality-customer satisfaction can be enhanced by aligning and controlling for service failure as contingency factors that has a significant influence on this relationship. Positive relationship between service quality and customer satisfaction was moderated by service failure, and that service quality is a predictor variable which operates well if aligned with service failure to better influence customer satisfaction. Significant investments in technology to enhance service production capacity and subsequently minimize service down time occasioned by service interruptions due to network congestions and frequent system maintenance.

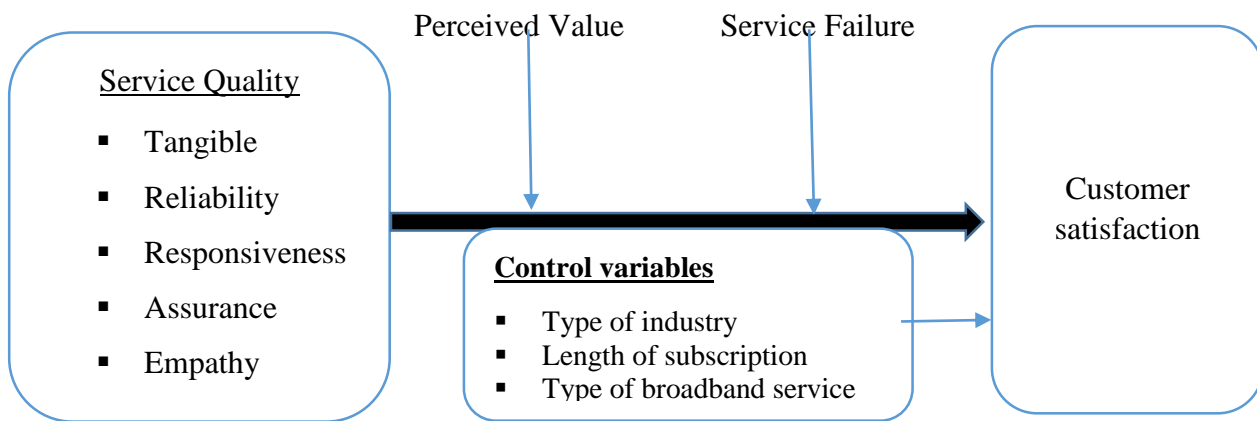
Walfried M., (2000) the occurrence versus non-occurrence of service failure and existence versus absence of service failure moderated the causal relationship between service quality and customer satisfaction

**2.3. Conceptual Framework and Research hypothesis**

From the theoretical and empirical literature reviews, it is hypothesized that service quality has positive relationship with customer satisfaction. In that higher level of service quality brings higher customer satisfaction. In addition to this universal relationship, there are several moderating variables that influence service quality and customer satisfaction relationship.

The conceptual framework indicates the main things to be studies. It shows up independent, moderating, control and dependent variables, and their assumed relationship that will be proved finally in data analysis.

Figure 2.4 Conceptual Model of the Study



*Source: Developed based on literature review, 2019*

### **2.3.1. Research Hypotheses**

Hypothesis can be defined as a logically speculated relationship between two or more variables expressed in the form of a testable statement. Relationships are estimated on the basis of empirical and theoretical literature reviews. In this particular study, the relationship between the independent variable (Service quality) and the dependent variable (Customer Satisfaction) has been examined with in two different analytical frameworks, namely universal or direct Service quality and customer satisfaction relationship and Service quality and customer satisfaction relationship with moderators - contingency approach.

Service quality has become a prominent research area because of its strong impact on customer satisfaction, business performance, customer loyalty and gaining higher profit. In previous studies of telecom industry, Wang et.al, (2004), investigated the telecom industry in china, Kim et.al, (2004), Tung, (2004) & serkon, (2006) examined the telecom service in south coria, Singapore and Canada respectively. These studies also supported that service quality positively influence customer satisfaction. In order to investigate the effect of service quality on customer satisfaction the following alternative hypothesis is proposed: -

***H1:** Service quality is positively related to customer satisfaction in that organizations with higher level of service quality will have higher customer satisfaction;*

Perceived values should be integrated with service quality in order to have higher customer satisfaction and profitability in return. To have ultimate customer satisfaction perceived values must be considered in service quality and customer satisfaction relationship and equivalent perceived benefits or service quality should be provided for perceived sacrifices (Caruana, Money, Berthon, 2000); The interaction's indicated that as perceived value increases the association between service quality and customer satisfaction strengthens (Ismail, Abdullah, Parasuraman 2009) When perceived value is low, the customer will be more inclined to switch to competing businesses, with a resulting decline in loyalty, and ultimately lost customers.

Therefore, researchers have considered perceived value an important moderating variable between service quality and customer satisfaction. This study proposes that perceived value has a significant moderating effect on the relationship between service quality and customer satisfaction. Thus in order to examine the moderating role of perceived value the following alternative hypothesis developed.

***H2:** Perceived value moderates the Service quality and customer satisfaction relationship, such that the influence of Service quality on customer satisfaction is strongest when perceived value is considered;*

The explanatory power of service quality on quality-customer satisfaction can be enhanced by aligning and controlling for service failure as contingency factors that has a significant influence on the relationship between service quality and customer satisfaction. Studies with moderating variables of service failure is conducted by (Walfried M., 2000), (Jeremiah, Ojera, Ochieng ,2015) in telecom industry. Consequently, this study proposes that reducing service failures can create significant moderating effects on the relationship between service quality and customer satisfaction. Thus in order to test the moderating role of service failure the following alternative hypothesis developed.

***H3:** Service failure moderates the relationship between Service quality and customer satisfaction negatively, such that the influence of service quality on customer satisfaction is strongest when service failure incidents are few or non.*

## **2.4. Definition of Broadband**

According to the International Telecommunication Union (ITU) definition, broadband refers to an internet connection speed of 256 Kbps or above both in download and upload directions. Broadband is critical technology that helps to boost the economy of countries in general and improves the lives of citizens in particular by facilitating the delivery of education, health and telecommunications services at low cost and to a wider population (Dwivedi et al., 2007). Based on Becta, ( 2008) broadband is high-speed symmetrical service, allowing fast in and outbound data capacity.

As assessed by Internet World Stats in march 2019, the average internet penetration rate in Africa and in the rest of the world has been 37.3% and 60.8% respectively. Specifically, in Ethiopia, the internet penetration has been 14.9% in march 2019 that is from total population of 110,135,635 there were 16,437,811 internet users in the country. This shows a great internet users growth relative to 2012 where the internet penetration was only 1.1%. ([www.internetworldstats.com](http://www.internetworldstats.com)).

Ethiotelecom business Internet service is provided through Wired, Wireless and Mobile connections with a speed starting from 256 Kbps to the business community.

#### **2.4.1 Fixed Broadband Internet-Copper/Fiber**

Fixed Broadband Internet service is an internet service with wired access. ADSL (Asymmetric Digital Subscriber Line) is a technology for transmitting digital information at a high bandwidth and can be provided through copper or fiber depending on the speed requested and other factors. Ethio provides this service in two options Limited Fixed Broadband Internet where the package service based on volume, mainly targeting residential customers. Unlimited Fixed Broadband Internet is unlimited in volume and sold with a fixed monthly rent with different access speed options. ([www.ethiotelecom.et](http://www.ethiotelecom.et); internal document)

#### **2.4.2 Fixed Wireless Broadband Internet – Aironet/Radwin**

Fixed wireless broadband internet is a broadband internet service with wireless access but fixed in a given location. Fixed wireless broadband signals are broadcasted from a wireless base station to a receiver. The receiver is usually a fixed aerial, antenna or dish device which mount on the building in a similar manner to a satellite dish. There needs to be a clear line of sight between the base station and the receiver for the service to work. There are different types of fixed wireless last mile access but ethio telecom currently provides the service with Aironet. It works up to 40 KM away from fixed network, good alternative for business when there's no wired network, it helps companies to have Internet and data services without deploying fixed line network, serves as a backup link to wired broadband.

### **2.4.3. Mobile Broadband**

Mobile Internet enables mobile phone, tablet or mobile broadband modem to access the internet while the customer are moving and it works both on 2G mobile,3G Mobile and 4G Mobiles currently 3G mobile is working all over Ethiopia but 4G mobile is only in Addis Ababa. EVDO is a broadband mobile internet service with high speed service using CDMA technology which works wherever CDMA network is available and Ethio telecom provide EVDO in three alternative packages 1GB, 2GB and 4GB for both prepaid and postpaid customers.

### **M2M Business Solution**

Machine to Machine is a wireless technology that enables machines to talk to each other and can be accessed directly from office's or home's computer. Ethio presents M2M solution that can be applied in Fleet management and cargo trucking, Banking POS materials, Tax- cash registration machine, Health – Telemedicine, Hotel and Home security system and more. Ethio's M2M business solutions enable to manage assets and machines in real time or when required. Ensures safeguarding against theft, misuse and machine breakdown. Reduce costs by control remote systems from wherever the customers are and it enables to reduce the running costs of the business significantly. In return, this will lead to gain massive competitive advantages, boost productivity and help transform the way business runs. Improve the company's image: since it enables you to take real-time business data and transform it into management information for an instant decision, it gives your customers a much better experience. Real-time tracking: M2M solutions let you know what is happening as it happens and let you make decisions quickly.

**Virtual Private Network /VPN/** enables private and public institutions to connect with their various branches and to establish their own private networks. VPN enables to share information and activate all information technology systems inside your branches via fixed and mobile options. The service is available all over Ethiopia in areas covered by ethio telecom terrestrial and mobile network that support data services. Ethio provides VPN services through, Mobile Broadband VPN and Fixed broadband VPN. As we can see from the below table Ethio telecom revised broadband internet tariff from 30% to 55% in order to satisfy its customer.

Table 2.7 Fixed Broadband Internet Current Tariff Vs Previous Tariff

<b>Broadband internet Current tariff vs Previous Tariff</b>			
<b>Speed</b>	<b>Previous Monthly Tariff</b>	<b>Current Monthly Tariff</b>	<b>Tariff reduction in %</b>
512kb/s	1092.5	764.75	30%
1Mb/s	1955	1368.5	30%
2Mb/s	3536.25	2475.38	30%
3Mb/s	5491.25	3843.88	30%
4Mb/s	6382.5	4467.75	30%
5Mb/s	7771.7	5082.75	35%
6Mb/s	9160.9	5697.75	38%
8 Mb/s	11939.9	6927.75	42%
10Mb/s	14717.7	8157.75	45%
12 Mb/s	17496.1	9387.75	46%
15Mb/s	21663.7	11232.75	48%
20Mb/s	28609.7	14307.75	50%
35 Mb/s	49447.7	23532.75	52%
40 Mb/s	56393.7	26607.75	53%
45 Mb/s	63339.7	29682.75	53%
50 Mb/s	70285.7	32757.75	53%
60 Mb/s	84177.7	38907.75	54%
80Mb/s	111961.7	51207.75	54%
100Mb/s	139745.7	63507.75	55%

*Source; ethio telecom internal report 2019*

According to recently released survey by cable.co.uk, in contrast with the cost of broadband in African continent, 10 out of the top 50 cheapest country in the world for mobile data are in sub-Saharan Africa.

Because of the current dramatic tariff revision of ethioteleom, mobile internet price of Ethiopia is relatively fair compared to different African countries specially the African largest economies, Nigeria and south Africa where the average price of data is still expensive.

## CHAPTR THREE

### RESEARCH METHODOLOGY

#### **3.1. Research Design and Sampling**

This research is a cross-sectional research design to study the relationship between the independent and dependent variables with other contingency variables. A cross-sectional refers to data collection at one point in time while longitudinal survey design implies with data collection over time. In this study data is collected from Enterprise Ethio telecom key account customers in one time. Therefore, the researcher used a cross-sectional research method.

#### **3.2 Research Method**

Explanatory and descriptive design are used for this study. Explanatory studies establish causal relationships between variables and focuses on studying a situation or a problem in order to explain the relationships between variables (Saunders, Lewis & Thornhill, 2009, p.139).

Descriptive researches are those studies for which the purpose is to produce an accurate representation of persons, events or situations (Saunders et al., p.590). The main focus of descriptive research studies is to describe the characteristics of a particular individuals or group. Therefore, this study will use both descriptive and explanatory method in order to examine effect of service quality on customer satisfaction of Ethio telecom and the interaction effect of moderating variables. Quantitative research approach will be implemented to look the cause and effect, and testing of theories and hypothesis (Muijs, 2010, p.9). The method uses to explain relationships or phenomena by collecting numerical data and analyzing based on mathematical method. Quantitative research approach is chosen to this study since it is an appropriate method to create quantifiable cause and effect relationship between the variables of the study.

A survey strategy is a popular and the most frequently used to answer who, what, where, how much and how many questions (Saunders et al., 2009, p.175). The aim of selecting survey strategy for this study is the method enables researcher to generalizes or make a claims about the population from sample result. The survey strategy preferred because surveys are concerned with hypothesis formulation and testing the analysis of the relationship between non-manipulated variables (Kothari, 2004, p.121) in addition survey research strategy is preferable because of its

economical nature that enables to make inference about large population from a small group of sample.

### **3.3 Source of data and Instruments of Data Collection**

There are two types of data collection method, Primary and secondary data collection. The primary data are those which are collected a fresh and for the first time, and thus happen to be original in character and collected through observation, interview method, through questionnaires (Kothari, 2004, p.95) while secondary data refer to the data which have already been collected and analyzed by someone else, it is either be published data or unpublished data (Kothari, 2004, p.111). According to Kothari (2004, p.112), each method of data collection has its uses and none is superior in all situations, selecting the appropriate method depends on the nature, scope and objective of the study, the availability of time and fund and precision required for the study. This study mainly depends on primary source of data and to some extent secondary sources. Primary data is collected through survey method by using close ended questionnaires. Secondary data sources were also used including ethio telecom internal documents, journals, books, and internet.

### **3.4. Sampling Method**

Given the broadband internet subscribers of Ethio telecom defined as Key Account (KA) in Addis Ababa as population of this study, stratified sampling method has been used by dividing the population in strata based on type of key account customer (KA). Then a proportionate representative was selected from each stratum using a simple random sampling. Applying this simple random sampling is good due to the fact that, as it explained by Flower and Rice, it possesses the recognized characteristics of a good sample frame such as comprehensiveness, accuracy, adequacy, and up-to-date and non-duplicated information (Fowler 2002, Rice 1997).

#### **3.4.1. Target Population**

The target population is the total group of individuals from which the sample might be drawn. Generalizability refers to the extent to which we can apply the findings of our research to the target population we are interested in. The target population of the study will be key account enterprise customers of Ethio telecom. According to the data obtained from Ethio telecom enterprise division in January 20, 2019, the target population of this study is 2550 key account enterprise customers.

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

Where, n = required sample size,

N = population size;

(e)<sup>2</sup>= is level of precision (0.05 in this research at 95% confidence interval);

Then, the total sample size will be allocated among the six customer categories based on their proportion to size as proposed by (Bowley, 1926). This ensures to get fair representation of samples from enterprise key account customers.

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

Where, ni – Sample size required from each customer category

n - total sample size,

N - population of Key account customers

### 3.4.2. Sample size

The sample frame for this study is 2550 enterprise key account customers out of these, 345 respondents were selected using a stratified simple random sampling. These customers are selected from six major enterprise key account sub segments financial institutions, government organizations, Public/privet Enterprises, Production and Industry, International Organizations NGO & Embassy.

Table 3.1 Sampling of this study

	Customer Category					Total Population & Sample
	Government organizations	Public/Privet	International Organization NGO & Embassy	Financial Institutions	Production and Industry	
Number of key account customers	510	904	505	81	550	2550
Sample taken from each customers	69	123	68	11	74	345
<i>13.5% of total population each category</i>						

Source. Own literature review

3.5. Measurements of variables

Table 3.2. Measurements of Variables

Variables		Item	Scale	Source
Independent	Service quality	SQ1:-Tangible, the physical appearance of the service, equipment, facilities, tools & the staff.	Five point Likert scale with 1-strongly dissatisfied to 5-strongly satisfied	(Cronin,Taylor 1992)
		SQ2:- Reliability, the ability to perform the promised service in an adequate & reliable manner.		
		SQ3:-Responsiveness, capacity to solve the customer problems & serve customers quickly.		
		SQ4:-Assurance, Knowledge & courtesy of employees.		
		SQ5:-Empathy, care & personalized attention given by the company to the customer		
Moderating	Perceived Value	PV1: - I feel I am getting good broadband services for a reasonable price.	Five point Likert scale with 1-strongly dissatisfied to 5-strongly satisfied	(Cronin.et.al. 2000) (Tung, 2004)
		PV2:- Using the broadband service provided by telecom company is worth for me to sacrifice some time and efforts		
		PV3: -In the future, I will recommend the broadband services provided by ET to others.		
		PV4: - The broadband service of ET is not expensive for the quality it provides.		
Moderating	Service Failure	SF1 :-ET anticipated broadband internet problem even before the company found out about it.	Five point Likert scale with 1-strongly dissatisfied to 5-strongly satisfied	(Grant 2000); (Grant & Ashford 2008) (Tax,E. 2006),
		SF2: -ET is proactive in explaining critical broadband internet Problems of our company.		
		SF3: -The speed of broadband internet service is good.		
		SF4:-ET took initiative in its interactions with our company		
		SF5:-ET resolve broadband internet faults within 48 hours		
		SF6: - The frequent broadband internet service failures in ET is declining from time to time.		
		SF6: -The broadband internet service of ET becoming stable with very low service failures.		
Dependent	Customer Satisfaction	Overall I am satisfied with ET broadband service of Ethio telecom.	Five point Likert scale with 1-strongly dissatisfied to 5-strongly satisfied	

Source; own literature review

### 3.6. Research Analysis Technique

Descriptive statistics has been used to describe the general information about the respondents’ demographic situation and characteristics of the Key account customer. Since the research involves both independent variable and moderators, hierarchical regression will be used to test the proposed hypotheses. In this analytical model, the independent main effect of the explanatory variables and moderators on the dependent variable will be examined and the interaction effects of contingency variables and service quality on ET key account customers will also be tested.

### 3.7. Research Model Specification

To examine the direct effect of service quality (SQ) on customer satisfaction and the effect of interactions between service quality and contingency variables on the same relationship, hierarchical regression will be applied with the following model.

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_n X_{ni} + \epsilon_i$$

Where:  $Y_i$  is dependent variable for  $i$ th observation;

$X_i$  is independent variable for  $i$ th observation;

$\beta_0$  is the intercept;

$\beta_s$  are regression coefficients

$\epsilon_i$  is the error term for  $i$ th observation

This basic regression model is rewritten in terms of the variables used in this research to show the relationship among them based on the research conceptual frame work.

$$CS = \beta_0 + \beta_1 SQ + \epsilon \dots\dots\dots 1$$

$$CS = \beta_0 + \beta_1 SQ + \beta_2 PV + \beta_3 SQ*PV + \epsilon \dots\dots\dots 2$$

$$CS = \beta_0 + \beta_1 SQ + \beta_2 SF + \beta_3 SQ*SF + \epsilon \dots\dots\dots 3$$

Where:

$CS$  is Customer Satisfaction

$SQ$  is Service Quality

$PV$  is Perceived Value

$SF$  is Service Failure

$SQ*PV$  is interaction between  $SQ$  and  $PV$

$SQ*SF$  is interaction between  $SQ$  and  $SF$

**Control variables:** control variables will be incorporated to ensure proper model specification, to prevent skewness problem and to take into account possible alternative explanations for customer satisfaction variations (Norazryana Mat Dawi et al, 2018). Several variables are selected as control based on prior literature in service quality and customer satisfaction and type of industry, length of subscription and types of broadband services has been used in this study.

### **3.8. Validity and Reliability**

Validity is the most critical criterion and indicates the degree to which an instrument measures what it is supposed to measure (Kothari, 2004, p.73). One of the methods to test validity, content validity, refers to whether or not the content of the manifest variables (questionnaire) is right to measure the latent concept (SQ, CS, PV, SF) that we are trying to measure (Muijs, 2010, p.66). In this study the researcher tried to develop a content-valid constructs by extensive search of literature to select carefully all the variables and their measurements from prominent sources.

The reliability of a measure refers to its consistency. One of the types of reliability, internal reliability, is particularly important in connection with multiple-item scales. It refers whether each scale is measuring a single idea, and hence whether the items that makes up the scale are internally consistent (Bryman & Cramer, 1999, p.65). Coefficient alpha measures internal consistency, this measure expected to be over 0.6 to say that our test is internally consistent (Muijs, 2010, p.73).

### **3.9. Ethical Considerations**

Conducting research, its design, data collection strategy, etc. require acceptable ethical considerations (Saunders, Lewis, & Thornhill, 2009, p. 160). The researcher, therefore, required to be abide by the ethical research principles. From that point of view, respondents from the targeted Key account customers have been transparently informed about the objective of the research. The researcher has made sure that the covering letter contains information about the investigation, the objectives of the data collection, the voluntary participation of the respondents, assurance regarding confidentiality and anonymity, the intention to reveal the findings up on completion of the study and the contact details of the researcher.

## CHAPTER FOUR

### DATA PRESENTATION ANALYSAIS AND INTERPRITATION

As indicated earlier, this study attempts to examine the effect of service quality on the customer satisfaction of ethioteleom enterprise customers. This study considers direct effect of service quality and interaction effects of perceived value and service failure on customer satisfaction. A total of 313 usable questionnaires were obtained and used for analysis.

#### 4.1. Reliability Test

To ensure the reliability of the measurement scales, Cronbach 's alpha was used in the calculation. Where by a higher value of above 0.6 indicated that the variables were reliable while the values above 0.9 are regarded as most reliable but anything below 0.6 was regarded inconsistent with the reliability scales as according to George & Mallery (2003), who suggested that in order for a scale to be reliable, the Cronbach 's alpha value should be above 0.6.

Table 4.1 Reliability Analysis

Variables	Cronbach's Alpha	No. of items
Tangibility	0.895	4
Reliability	0.860	4
Responsiveness	0.901	5
Assurance	0.910	4
Empathy	0.939	4
Perceived Value	0.967	5
Service Failure	0.939	4
Total	<b>0.868</b>	<b>30</b>

Source: Own Survey, SPSSv23, 2019

Table above shows the reliability test for the independent variables (Tangibility, Reliability, Responsiveness, Empathy, and Assurance) and Moderators (Perceived Value, and Service failure). The internal consistency test for Reliability consisted of four questions and the result is

0.860 representing 86% scale reliable. The reliability test result for tangibility consisted of four questions is 0.895 indicating that 89.5% reliable. The reliability test result for Empathy was 0.939 indicating that 93.9% reliable. This result is considered high according to the Alpha Coefficient Range and thus the researcher concludes that the questions regarding Service quality dimensions are acceptable. The reliability test result for Perceived value and service failure was 0.967 and 0.939 respectively. Thus, all explanatory variables are reliable and acceptable range of Cronbach's Alpha Coefficient. Based on the examination of the research scales and constructs, it can be concluded that each variable represents a reliable construct.

#### **4.2. Validity Test Result**

Validity is the most critical criterion and indicates the degree to which an instrument measures what it is supposed to measure. The questionnaire was carefully designed and tested with a few members of the population for further improvements. Content validity of the survey questionnaire was validated by professionals and the research advisor. A pilot test was used to ensure validity; a pre-test was sent to five respondents to see if the questionnaire contains anything that was hard to interpret. Thus using Kaiser-Meyer-Olkin Measure of validity test method the following results were found.

Table 4.2 Validity Test

<b>Variables</b>	<b>KMO</b>
Tangibility	0.826
Reliability	0.821
Responsiveness	0.859
Assurance	0.847
Empathy	0.793

*Source: Own Survey, SPSSv23, 2019*

From the above table, the validity test result is ranging between 0.793 and 0.859 and all values of the variables are above 0.60. According to Sharma S. (1996), as cited in Gezahegn Bacha, (2015), it is said to be acceptable measure if the KMO value Above 0.60 the questions designed and content validity is valid and Acceptable.

### 4.3. Data Collection overview

This chapter contains the findings and analysis of the research study based on interpretation of the data collected. The researcher distributed a total of 345 questionnaires to Ethio telecom customers. Out of the total questionnaires, 32 questionnaires were not collected and 313 useable questionnaires were obtained to enable a meaningful analysis of the data with 91% response rate. Statistical Package for the Social Sciences (SPSS) version 23 software is used to analyze the research findings.

### 4.4. Demographic Characteristics of the respondents

Table 4.3 Demographic Characteristics of Respondents

Variables	Category	Frequency	Percent
Gender	Male	178	56.9
	Female	135	43.1
Age Category	Below 25 years	26	8.3
	25-35 years	189	60.4
	36-50 years	81	25.9
	above 50 years	17	5.4
Educational level	Diploma	56	17.9
	Degree	152	48.6
	MA/Msc	93	29.7
	Phd and above	12	3.7
Position in the organization	IT head	46	14.7
	Network Administrator	47	15
	Management member	83	26.5
	staff/end user	114	36.4
	other	23	7.3
Experience	1-3 years	77	24.6
	4- 6 years	73	23.3
	6-8 years	95	30.4
	8-10 years	46	14.7
	Above 10 years	22	7

Source: Own Survey, SPSSv23, 2019

Based on the demographic characteristics about 56.9 percent of the respondents were male, and about 43.1% of them were female. The gender category represents that most of the respondents were male. The age category result shows that about 8.3% were below the age of 25 years old, about 60.4% of them were within the age of 25- 35 years old, about 25.9% were within the age of 36-50 years old, and about 5.4% of them were above the age of 50 years old. Thus, most of the respondents were within the age of 25-35 years old.

The educational level of the respondents indicates that about 17.9% of the respondents were diploma holders, about 48.6% of them were degree holders, and about 29.7% of the respondents had MA/Msc degree holders, and about 3.7% of the respondents were Phd holders. Therefore, the majority of the respondents was degree holders and educated in their educational level. This shows that there is an opportunity that they might consume Ethio-telecom services and provide logical response. As we can see the table above most of the respondents about 36.4% were staff/end users, while about 26.5% were management members, and about 14.75 were IT heads, and about 15% were network administrators, and 7.3% of them were others undefined. Majority of the respondents about 30.4% were working between 6-8 years in their company while few of them had experience of above 10 years in the company.

#### **4.5. Demographic Summary Result of Control Variables**

Based on the table the first constructed control variable result indicates that about 19.2% of the respondents have less than two years' broadband internet service customers, about 20.4% of them were about 2 to 6 years' customers, about 13.4% of the respondents were 4 to 6 years of customers and about 47% of the respondents were above 6 years' customers for internet broadband internet services. Therefore, most of the respondents were customers of Ethio-telecom broad band internet service above 6 years being customer. The result from the second control variable survey indicates that about 54% were used ADSL service, about 39% were using wireless service, and about 7% were using other types of broad band internet services. Thus, most of them were using ADSL broad band internet service. Based on the survey finding result on control variable about 8.6% of the respondents were Embassies and NGOs, about 29.1% of them were government organizations, about 12.85% were financial institutions, about 30.7%

were private and public institutions, and about 18.8% were industry and manufacturing sectors. One can infer that most of the respondents were in private and government institutions.

Table 4.4 Descriptive statistics summary result for control variables

Questions	Category	Frequency	Percent
Experience Using the broadband service	< 2 years	60	19.2
	2 to 4 years	64	20.4
	4 to 6 years	42	13.4
	>6 years	147	47
	Total	313	100
Types of broadband Service	Fixed(ADSL)	169	54
	Wireless	122	39
	other	22	7
	Total	313	100
Types of industry	Embassy and NGO	27	8.6
	Government Organization	91	29.1
	Financial Institution	40	12.8
	Private/Public	96	30.7
	Industry/Manufacturing	59	18.8
	Total	313	100

Source: own research survey, 2019

### 4.6 Descriptive Statistics Result

The descriptive statistics result was made to get the mean, standard deviation, and minimum, maximum value of the variables. The mean value of Assurance was 3.85 indicating that customers are agreed on Assurance attributes of the company service with standard deviation value 1.005. Therefore, employees of ethio-telecom create confidence in the customers, customers feel safe in the operation of the service, and the employees are consistently nice or courteous with customers. The variables related to empathy has mean value of 3.69 indicates that customers are agreed and satisfied with the employees’ giving best attention to employees, and its employees understand the needs of their customers. The variables containing perceived value has mean value 2.17 indicating that the customers are dissatisfied with the value they are scarifying in relation to the company service quality. The mean value of service failure is 1.08 report which indicates that customers are highly dissatisfied with ethioteleom network quality due to high service failure (network failure).

Table 4.5 Descriptive Statics Result Summary.

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Tangibles	313	1	5	3.53	0.940
Reliability	313	1	5	1.75	0.839
Responsiveness	313	1	5	1.80	0.867
Assurance	313	1	5	3.85	1.005
Empathy	313	1	5	3.69	1.057
Perceived Value	313	1	5	2.26	1.319
Service Failure	313	1	2	1.08	0.264
Customer Satisfaction	313	1	4	2.67	0.627
Valid N (listwise)	313				

Source: Own Survey, SPSSv23, 2019

The result of the descriptive statistics result indicates the mean value of tangibility was 3.53 indicating that customers of ethio-telecom agreed that the physical facilities are visually, attractive at the business centers of the company; ethio-telecom has up-to-date equipment for

broadband internet service with small standard deviation value of 0.940. The mean value of Reliability was 1.75 indicating that respondents were disagreed and not satisfied with reliability of Ethio- telecom service with small standard deviation value of 0.839. The customers are not satisfied with the broad band internet service, maintaining error-free customer records.

Based on the mean value 1.80 of the responsiveness of Ethio-telecom services customers are disagreed and not satisfied with the its service responsiveness. Employees who involved in the delivery of the broadband internet service are not performing well, the company's and employees of the company are busy to respond customers request promptly. From the table, we can see that the standard deviation (SD) of variable's is less than one; this implies that the variations in respondents' opinion/view is small.

#### **4.7 Correlation Analysis Result and Discussions**

The primary objective of correlation analysis is to measure the strength or degree of linear association between two variables. The correlation coefficient examines the strength and direction of the linear relationship between two variables. The correlation coefficient can range between -1 and +1, the larger the absolute value of the coefficient; the stronger the relationship between the variables. Zero (0) indicates no relationship between two variables. The sign of the relationship indicates the direction of relationship.

P-value  $\leq \alpha$ : The correlation is statistically significant; if the p-value is less than or equal to the significance level, then we can conclude that the correlation is different from 0. P-value  $> \alpha$ : The correlation is not statistically significant; if the p-value is greater than the significance level, then you cannot conclude that the correlation is different from 0.

As such the following table shows the correlation between Customer satisfaction, Control variables, all independent variables (service quality dimensions), and moderating variables (Perceived value and Service failure).

Table 4.6 Pearson Correlation between Control, Independent, Moderators and Customer Satisfaction

		C1	C2	C3	SQ	PV	Service Failure	Customer Satisfaction
C1	Pearson Correlation							
	Sig. (2-tailed)	1						
	N	313						
C2	Pearson Correlation	-.040						
	Sig. (2-tailed)	.479	1					
	N	313	313					
C3	Pearson Correlation	.000	-.070					
	Sig. (2-tailed)	.995	.216	1				
	N	313	313	313				
SQ	Pearson Correlation	.026	.069	.013				
	Sig. (2-tailed)	.646	.227	.814	1			
	N	313	313	313	313			
Perceived Value	Pearson Correlation	.019	.158**	-.039	.104			
	Sig. (2-tailed)	.731	.005	.491	.066	1		
	N	313	313	313	313	313		
Service Failure	Pearson Correlation	-.141*	-.030	.069	-.032	-.126*	1	
	Sig. (2-tailed)	.012	.598	.226	.575	.026	313	
	N	313	313	313	313	313	313	
Customer Satisfaction	Pearson Correlation	.018	.084	-.041	<b>.798**</b>	<b>.186**</b>	<b>-.119*</b>	1
	Sig. (2-tailed)	.746	.136	.472	<b>.000</b>	<b>.001</b>	<b>.035</b>	313
	N	313	313	313	313	313	313	

\*. Correlation is significant at the 0.05 level (2-tailed).

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

Source; own source SPSS 23,2019

From the table above correlation table 4.4, we can see that most of the constructed variables were correlated with Customer satisfaction. Among the variables the highest and strong correlation coefficient was found between Service Quality and customer satisfaction (0.798), while the weakest correlation was between Perceived value and customer satisfaction (0.186), followed by between service Failure and customer satisfaction (-0.119). Therefore, from the above table, we can conclude that all predictors variables (service quality dimensions) have positive and significant correlation with customer satisfaction because the p (sig) value is less than  $\alpha=0.05$  level. Among the predictor variables perceived value has positive and significant correlation with customer satisfaction and service failure has negative and significant correlation with customer satisfaction with p (sig) value less than 0.05.

#### **4.8 Diagnostics of Assumptions in Regression**

Before conducting a regression analysis, the basic assumptions concerning the original data must be made. This is a mandatory prerequisite in explaining the relationships between dependent and explanatory variables. Five major assumptions have to be checked and proved to be met reasonably well. In this study these important least square assumptions were checked and explained as below.

##### **4.8.1 Linearity**

Linearity refers to the degree to which the change in the dependent variable is related to the change in the independent variables (Darlington, 1968). To determine whether the relationship between the dependent variable customer satisfaction and the predictor variable Service quality and between moderator variables (Perceived Value and Service failure) and customer satisfactions, is linear; plots of the regression residuals through SPSS V23 software had been used.

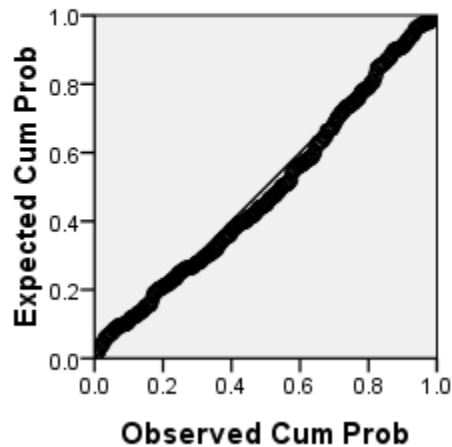
**Normal P-P Plot of Regression Standardized Residual**

Figure 4.1 Linearity

*Source: Own Survey, SPSSv23, 2019*

From the above graph the scatter plot of residuals shows no large difference in the spread of the residuals as you look from left to right on the diagonal on figure above. This result suggests the relationship we are trying to predict is linear.

#### 4.8.2 Normality

Secondly, the linear regression analysis requires all variables to be multivariate normal (Darlington, 1968). This assumption can best be checked with a histogram and a fitted normal curve or a P-P Plot (Keith, 2006). As per the Classical Linear Regression Models assumptions, the error term should be normally distributed or expected value of the errors terms should be zero ( $E(u_t) = 0$ ).

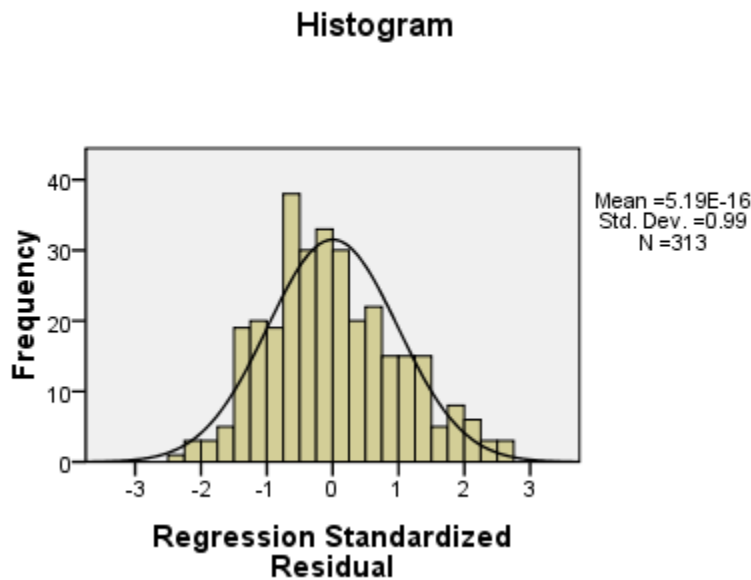


Figure 4.2 Normality

*Source: Own Survey, SPSSv23, 2019*

Figure above shows the frequency distribution of the standardized residuals compared to a normal distribution. As you can see, although there are some residuals (e.g., those occurring around 0) that are not that much far away from the curve, many of the residuals are fairly close to 0. Moreover, the histogram is bell shaped which lead to infer that the residual (disturbance or errors) are normally distributed. Thus, no violations of the assumption normally distributed error term.

#### 4.8.3 Multicollinearity Test between Study Variables

Thirdly, linear regression assumes that there is little or no multi-co linearity in the data.

Multicollinearity occurs when the independent variables are not independent from each other. A second important independence assumption is that the error of the mean has to be independent from the independent variables. Thus, we can test using the following criteria (Keith, 2006).

1. Correlation matrix – when computing the matrix of Pearson's Bivariate Correlation among all independent variables the correlation coefficients need to be smaller than 1. Thus, from this research finding correlation table indicates that all independent variables have correlation coefficient less than one.

2. Tolerance – the tolerance measures the influence of one independent variable on all other independent variables; the tolerance is calculated with an initial linear regression analysis. Tolerance is defined as  $T = 1 - R^2$  for these first step regression analysis. Thus from the finding in coefficient table all tolerance values except Control variable tolerance value were less than one. See regression table 4.7 below.
3. Variance Inflation Factor (VIF) – the variance inflation factor of the linear regression is defined as  $VIF = 1/T$ . Similarly, with  $VIF > 10$  there is an indication for multicollinearity to be present; with  $VIF > 100$  there is certainly multicollinearity in the sample. Thus from the coefficient table all VIF values are less than 10. Simply the values are not more than 1.051 (see regression table 4.7 below). This confirms us there are no violations of little or no Multicollinearity between independent variables.

Simply, from the below correlation table 4.4 there is no strong pair-wise correlation between the explanatory variables (Predictors, and control, mediator variables). As a rule of thumb, inter-correlation among the independent variables above 0.80 signals a possible multi-co linearity problem. In this study the maximum value of the correlation coefficient is 0.126 (between Perceived value and Service failure). Thus, it can be concluded that all the variables in the study have weak correlation power as a result there is no multi-co linearity problem.

Table 4.7 Multicollinearity Test

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics		
	B	Std. Error	Beta			Tolerance	VIF	
1	(Constant)	2.544	.158		16.099	.000		
	C1	.011	.029	.022	.384	.702	.998	1.002
	C2	.082	.056	.083	1.457	.146	.993	1.007
	C3	-.017	.027	-.035	-.617	.538	.995	1.005
2	(Constant)	.347	.134		2.588	.010		
	C1	.000	.018	-.001	-.038	.970	.998	1.002
	C2	.026	.034	.026	.762	.447	.988	1.012
	C3	-.024	.016	-.050	-1.447	.149	.995	1.005
	SQ	.800	.034	<b>.797</b>	23.253	<b>.000</b>	.994	1.006
3	(Constant)	.291	.134		2.170	.031		
	C1	-.002	.017	-.004	-.107	.915	.997	1.003
	C2	.011	.034	.011	.323	.747	.966	1.035
	C3	-.022	.016	-.047	-1.376	.170	.994	1.006
	SQ	.791	.034	<b>.788</b>	23.153	<b>.000</b>	.985	1.015
	Perceived Value	.047	.016	<b>.100</b>	2.914	<b>.004</b>	.965	1.036
4	(Constant)	.522	.164		3.173	.002		
	C1	-.008	.017	-.015	-.442	.659	.977	1.023
	C2	.010	.034	.010	.298	.766	.966	1.035
	C3	-.020	.016	-.041	-1.229	.220	.990	1.010
	SQ	.790	.034	<b>.786</b>	23.288	<b>.000</b>	.985	1.015
	Perceived Value	.042	.016	<b>.091</b>	2.637	<b>.009</b>	.952	1.051
	Service Failure	-.191	.080	<b>-.082</b>	-2.389	<b>.018</b>	.960	1.041

a. Dependent Variable: Customer Satisfaction  
 Source: Own Survey, SPSSv23, 2019

**4.8.4 Autocorrelation Test**

Fourthly, linear regression analysis requires that there is little or no autocorrelation in the data. Autocorrelation occurs when the residuals are not independent from each other (Stevens, 2009). While a scatter plot allows you to check for autocorrelations, you can test the linear regression model for autocorrelation with the Durbin-Watson test. The value of Durbin Watson assumes to be between 0 and 4, values around 2 indicate no autocorrelation. From our test, the value of Durbin Watson is about 1.352. Thus it lies between  $0 < 1.352 < 4$  (see table 4.8 below). The value of Durbin Watson is close to 2 indicates there is no violation of Autocorrelation.

Table 4.8 Durbin Watson Statics for Multicollinearity

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.094 <sup>a</sup>	.009	.000	.616	.009	.916	3	309	.434	
2	.800 <sup>b</sup>	.640	.636	.372	.631	540.682	1	308	.000	
3	.806 <sup>c</sup>	.650	.644	.367	.010	8.493	1	307	.004	
4	.810 <sup>d</sup>	.656	.650	.365	.006	5.706	1	306	.018	1.352

- a. Predictors: (Constant), C3, C1, C2
- b. Predictors: (Constant), C3, C1, C2, SQ
- c. Predictors: (Constant), C3, C1, C2, SQ, PV
- d. Predictors: (Constant), C3, C1, C2, SQ, PV, SF
- e. Dependent Variable: Customer Satisfaction

**4.8.5 Homoscedasticity Test**

Lastly, homoscedasticity test, which refers to whether residuals are equally distributed, or presence of equality of variance/homogeneity of variance (Osborn & Waters, 2002). Homoscedasticity can be checked by visual examination of a plot of the standardized residuals by the regression standardized predicted value. If the error terms are distributed randomly with no certain pattern, then the problem is not detrimental for analyses. Figure below shows that the

standardized residuals in this research are distributed evenly indicating heteroscedasticity is not a serious problem for this data.

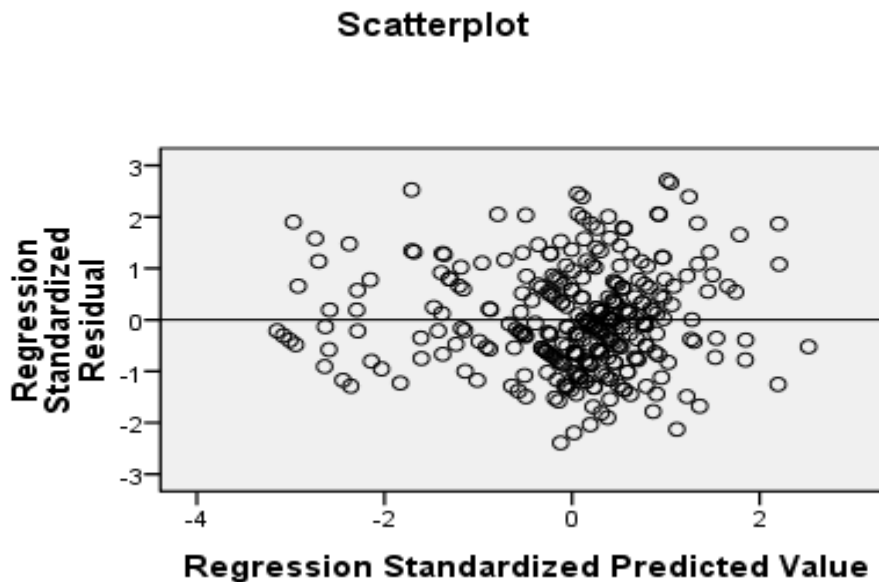


Figure 4.3 Homoscedasticity Test

*Source: Own Survey, SPSSv23, 2019*

Thus, from an explanation of the information presented in the entire five tests one can conclude that there are no significant data problems that would lead to say the assumptions of regressions have been seriously violated.

#### **4.9 Regression Analysis Result and Discussions**

In order to study the relationship between the dependent and independent variables and specify the best predictors of the explanatory variable in addition with the moderating variables a Multiple Regression model was applied (Jaccard & Turrisi, 2003). Multiple regressions were used for testing the model and hypotheses. It provides information regarding the significance of the variables that were included in the model while the  $R^2$  explains how much variance in the dependent variable is explained by the model or how much customers are satisfied with the existing Ethio-telecom services is explained by the constructed variables. Statements of

hypothesis were formulated based on the predictor and moderators used in this study in order to come up with the results.

Hierarchical multiple regression was performed to investigate the ability of moderating variables to predict levels of customer satisfaction. Preliminary analyses were conducted to ensure no violation of the assumption of normality, linearity, multicollinearity, autocorrelation, and homoscedasticity.

Table 4.9 Hierarchical Regression Analysis /Direct Effect

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.094 <sup>a</sup>	.009	.000	.616	.009	.916	3	309	.434
2	.800 <sup>b</sup>	.640	.636	.372	.631	540.682	1	308	.000
3	.806 <sup>c</sup>	.650	.644	.367	.010	8.493	1	307	.004
4	.810 <sup>d</sup>	.656	.650	.365	.006	5.706	1	306	.018

Source: Own Survey, SPSSv23, 2019

Variables entered in Block 1 (Control variables) explained 0.9% of the variance in customer satisfaction. After block 2 variable (Service quality) has been included, the model as a whole explained 64% of variance in customer satisfaction. When we entered block 3 variables (perceived value) has been included, the model as a whole explained 65% of variance in customer satisfaction.

After block 4 variable (service failure) has been included, the model as a whole explained 65.6% of variance in customer satisfaction. This is indicating that the model significant contribution, as indicated by Sig. F Change value for this line (.000)

Table 4.9 above shows three important elements, thus R, R<sup>2</sup> and the adjusted R<sup>2</sup>. R shows the correlation or significant positive relationship of variables with the customer satisfaction. R<sup>2</sup> shows the predictive capacity of the independent variables on dependent variable. The R<sup>2</sup>

value =.009 meaning 0.9% of the variance in the model can be predicted using the control variable i.e. categories of ethio telecom company customer category.

Concerning the second model all predicting variables (service quality) are entered into equation in the order specified by the researcher based on theoretical grounds. The  $R^2$  value changes from 0.009 to 0.64. Here, the  $R^2$  value 0.64 indicates that customer satisfaction is explained by service quality without any moderating effect of variables by 64% of variance.

Based on the third model,  $R^2$  value is changed from 0.64 to 0.65. Thus, about 65% of the variance in customer satisfaction is explained by category of Perceived value and service quality. While the fourth model indicates that when perceived value and service failure is entered in to regression the  $R^2$  value change increase from 0.65 to 0.656 signifies that about 65.6% of customer satisfaction is explained when ethio telecom considers perceived value and service failure on its service quality.

Therefore, service quality and moderator variables (Perceived value and Service failure) were good explanatory variables of the factors influencing customer satisfaction to use Ethio-telecom services. About 65.6% of the variance in the model can be predicted using the independent variables and considering moderating variables or in simple words 65.6% of customer satisfaction is explained by the constructed service quality and moderating variables. However, the remaining 34.4% changes in customer satisfaction in ethio-telecom services can be explained by the other variables not included in the model.

#### **4.10 ANOVA Analysis result**

To test significance of the model ANOVA (F- test) was performed and the **ANOVA** table indicates that the model as a whole (which includes all blocks of variables) is significant. F test is a statistical test its purpose is to examine whether the independent variables, taken together, have a significant effect to the dependent variable. If the significance value of the F statistic is small; that means smaller than the error margin 0.05, then the independent variables explain the variation in the dependent variable significantly.

Table 4.10 ANOVA Analysis Result

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.043	3	.348	.916	.434 <sup>a</sup>
	Residual	117.364	309	.380		
	Total	118.407	312			
2	Regression	75.814	4	18.954	137.057	.000 <sup>b</sup>
	Residual	42.593	308	.138		
	Total	118.407	312			
3	Regression	76.961	5	15.392	114.011	.000 <sup>c</sup>
	Residual	41.447	307	.135		
	Total	118.407	312			
4	Regression	77.719	6	12.953	97.417	.000 <sup>d</sup>
	Residual	40.688	306	.133		
	Total	118.407	312			

a. Predictors: (Constant), C3, C1, C2

b. Predictors: (Constant), C3, C1, C2, SQ

c. Predictors: (Constant), C3, C1, C2, SQ, Perceived Value

d. Predictors: (Constant), C3, C1, C2, SQ, Perceived Value, Service Failure

e. Dependent Variable: Customer Satisfaction

Based on the ANOVA analysis result indicates that the first model with the block of control variables is insignificant i.e.  $F(1,309) = .916$  and Sig (p-value)  $0.434 > 0.05$ . The second model (add service quality as a block), third block (entered Perceived value), and fourth model (entered Service failure as last block) is all significant i.e. sig (p-value)  $< 0.05$ . This shows that the statistically significant relationships between the predictor variables and moderating variables and customer satisfaction at 5% significance level. Thus, the explanatory variables have great impact on customers' satisfaction in Ethio-telecom. But it does not mean that all these factors influencing customers have equally significant correlation with customer satisfaction. Beside the F statistics 97.417 which is used to measure the overall test of significance of the model was

presented, and the model is well fitted at 5 percent level of significance. The control variable has not any statistical significant influence on customer satisfaction because Sig. value is greater than 0.05 i.e.  $0.434 > 0.05$  and it is not significant.

#### **4.11 Hierarchical Regression Coefficient Analysis Result**

The below table 4.11, regression analysis coefficients indicates how much the dependent variable (customer satisfaction) varies with an independent variable plus moderating variables, when all other independent variables are held constant (Jaccard & Turrisi, 2003). The beta coefficients indicate that how and to what extent the independent variables influence the dependent variable.

To examine the interaction effect of perceived value and service failure as a moderator and service quality dimensions on the relationship between service quality and customer satisfaction, the product of the two mean centered variables was introduced in the hierarchical regression model.

As shown in model 4 Table 4.11, among the explanatory variables the best predictor of customer satisfaction was Service quality (Beta=0.786) p-value  $< 0.05$ , followed by moderators Perceived value (Beta=0.091) p-value  $< 0.05$ , and service failure (Beta=-0.082) at p-value  $< 0.05$ .

The direct effect of service quality was positively and significantly affects customer satisfaction. Among the moderating variables Perceived value has positive and significant influence on customer satisfaction while among the moderating variable service failure has negative and statistically significant effect on customer satisfaction.

Accordingly, one can conclude that the result of direct effect of service quality and moderating factors indicates that there is statistically significant effect on customer satisfaction in Ethio-telecom.

Table 4.11 Regression Coefficient Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	2.544	.158		16.099	.000
	C1	.011	.029	.022	.384	.702
	C2	.082	.056	.083	1.457	.146
	C3	-.017	.027	-.035	-.617	.538
2	(Constant)	.347	.134		2.588	.010
	C1	.000	.018	-.001	-.038	.970
	C2	.026	.034	.026	.762	.447
	C3	-.024	.016	-.050	-1.447	.149
	SQ	.800	.034	<b>.797</b>	23.253	.000
3	(Constant)	.291	.134		2.170	.031
	C1	-.002	.017	-.004	-.107	.915
	C2	.011	.034	.011	.323	.747
	C3	-.022	.016	-.047	-1.376	.170
	SQ	.791	.034	<b>.788</b>	23.153	<b>.000</b>
	Perceived Value	.047	.016	<b>.100</b>	2.914	<b>.004</b>
4	(Constant)	.522	.164		3.173	.002
	C1	-.008	.017	-.015	-.442	.659
	C2	.010	.034	.010	.298	.766
	C3	-.020	.016	-.041	-1.229	.220
	SQ	.790	.034	<b>.786</b>	23.288	<b>.000</b>
	Perceived Value	.042	.016	<b>.091</b>	2.637	<b>.009</b>
	Service Failure	-.191	.080	<b>-.082</b>	-2.389	<b>.018</b>

Source: Own Survey, SPSSv23, 2019

**4.11 Interaction effect of Predictors with moderating variables**

To examine the interaction effect of Perceived value and service failure (as a moderator) and service quality (as a predictor) on the relationship between service quality and customer satisfaction, the product of the two mean centered variables was introduced in the hierarchical regression model.

**4.11.1 Interaction effect of Perceived value with service quality on customer satisfaction**

Table 4.12 Perceived Value Interaction Effect

Coefficients									
Model Five		Unstandardized Coefficients		Standardized Coefficients	t	Sig.			
		B	Std. Error	Beta					
5	(Constant)	.930	.225		4.125	.000			
	C1	-.008	.017	-.015	-.436	.663			
	C2	.013	.033	.013	.398	.691			
	C3	-.022	.016	-.046	-1.390	.165			
	SQ	.646	.064	.643	10.024	.000			
	Perceived Value	-.186	.089	-.398	-2.099	.037			
	Service Failure	-.177	.079	-.076	-2.232	.026			
	<b>SQ* Value</b>	.077	.029	<b>.531</b>	2.619	<b>.009</b>			
Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.094 <sup>a</sup>	.009	.000	.616	.009	.916	3	309	.434
2	.800 <sup>b</sup>	.640	.636	.372	.631	540.682	1	308	.000
3	.806 <sup>c</sup>	.650	.644	.367	.010	8.493	1	307	.004
4	.810 <sup>d</sup>	.656	.650	.365	.006	5.706	1	306	.018
5	.815 <sup>e</sup>	<b>.664</b>	.656	.361	<b>.008</b>	6.860	1	305	.009

[a. Predictors: (Constant), C3, C1,

b. Predictors: (Constant), C3, C1, C2, SQ

- c. Predictors: (Constant), C3, C1, C2, SQ, PV
- d. Predictors: (Constant), C3, C1, C2, SQ, PV SF
- e. Predictors: (Constant), C3, C1, C2, SQ, PV, SF, SQ\*PV

The moderated regression results in model 5 illustrates that the interaction term explained slight additional variances ( $R^2 = 0.664$  and  $\Delta R^2 = 0.008$ ,  $p < 0.05$ ) in the relationship between Service quality and Customer satisfaction and this variation is statistically significant. Although the effect of this moderator (perceived value) on the Service Quality-customer satisfaction relationship is small, the statistical significance tells that the addition of perceived value as a moderator influences the relationship between the dependent and independent variables.

With the interaction effect, as shown in table above 4.12, the full model explained a higher variance in customer satisfaction ( $R^2 = 0.664$ ). The moderated model significantly explained the relationship that the effect of the interaction term on customer satisfaction is positive ( $\text{Beta} = 0.531$ ,  $p = 0.009 < 0.05$ ).

#### **4.11.2 Interaction Effect of Service Failure with Service quality on Customer satisfaction**

The moderated regression results of Model 6 of the below Table illustrates that the interaction term explained slight additional variances ( $R^2 = 0.667$  and  $\Delta R^2 = 0.011$ ,  $p < 0.05$ ) in the relationship between Service quality and Customer satisfaction and this variation is statistically significant. The interaction effect of service quality with service failure increases the variation of explanatory variables on customer satisfaction from  $R^2 = 0.656$  to  $R^2 = 0.667$ . Although the effect of this moderator (service failure) on the Service Quality-customer satisfaction relationship is small, the statistical significance tells that the addition of service failure as a moderator influences the relationship between the dependent and independent variables. With the interaction effect, as shown in table 4.13 below the full model explained a small increase in variance in customer satisfaction ( $R^2 = 0.667$ ). Thus, the interaction of Service quality with service failure results to increase in the variation of  $R^2$  value. This indicates that service failure moderates service quality in small addition of the variation of customer satisfaction. The

moderated model significantly explained the relationship that the effect of the interaction term on customer satisfaction is negative (Beta= -0.838, p=0.002 <0.05) which implies that the decrease in service failure will make the service quality influence on customer satisfaction strongest.

Table 4.13 Service Failure Interaction Effect

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
6 (Constant)	-1.052	.520		-2.024	.044
C1	-.014	.017	-.028	-.833	.405
C2	.012	.033	.013	.375	.708
C3	-.019	.016	-.040	-1.215	.225
SQ	1.340	.176	1.334	7.617	.000
Perceived Value	.039	.016	.084	2.468	.014
Service Failure	1.306	.476	.559	2.742	.006
<b>SQ*failure</b>	<b>-.517</b>	<b>.162</b>	<b>-.838</b>	<b>-3.187</b>	<b>.002</b>

Model Summary									
No	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.094 <sup>a</sup>	.009	.000	.616	.009	.916	3	309	.434
2	.800 <sup>b</sup>	.640	.636	.372	.631	540.682	1	308	.000
3	.806 <sup>c</sup>	.650	.644	.367	.010	8.493	1	307	.004
4	.810 <sup>d</sup>	.656	.650	.365	.006	5.706	1	306	.018
5	.817 <sup>e</sup>	.667	.660	.359	.011	10.156	1	305	.002

Source; own SPSS v23 2019

a. Predictors: (Constant), C3, C1,

b. Predictors: (Constant), C3, C1, C2, SQ

c. Predictors: (Constant), C3, C1, C2, SQ, PV

d. Predictors: (Constant), C3, C1, C2, SQ, PV, SF

e. Predictors: (Constant), C3, C1, C2, SQ, PV, SF, SQ\*SF

## 4.12 Hypothesis Testing

### 4.12.1 Service Quality

Based on the regression analysis result the following hypothesis was tested.

**Hypothesis 1:** - Service Quality is positively related to customer satisfaction in that organizations with higher level of service quality will have higher customer satisfaction.

In the regression analysis, service quality has been introduced in Model 2 (Table 4.11) to see the direct effect of service quality on customer satisfaction. Consistent with the initial proposed hypothesis, customer satisfaction has positive and statistically significant effect on customer satisfaction (standardized Beta = 0.797,  $p < 0.05$ ). And compared to model 1, which contains only control variables, addition of service quality in the model explains substantial extra variance in customer satisfaction ( $\Delta R^2 = 0.631$ ,  $p < 0.05$ ). These statistics supported hypothesis 1 which posits Service quality is positively related to customer satisfaction in that Ethio telecom with higher level of service quality achieve higher customer satisfaction compared to those with lower Service quality. The positive and significant universal effect of service quality on customer satisfaction in this study is consistent with prior empirical researches as mentioned in a meta-analysis on SQ-customer satisfaction (Wang & Lo 2002; Ahmed et al., 2010; Saghier 2013; Androniceanu, 2017)

### 4.12.2 Perceived Value

**Hypothesis 2:** Perceived value moderates the service quality and customer satisfaction relationship, such that the influence of service quality on customer satisfaction is strongest when perceived value is considered.

The moderated regression results in model 5 table 4.12 illustrates that the interaction term explained slight additional variances ( $\Delta R^2 = 0.008$ ,  $p < 0.05$ ) in the relationship between Perceived value and Service quality this variation is statistically significant. Although the effect of this moderator on the Service quality and customer satisfaction relationship is small, the statistical significance tells that the addition of perceived value as a moderator influences the relationship between the dependent and independent variables. With the interaction effect, as shown in table 4.12 model 5, the full model explained a higher variance in customer satisfaction

(R squared = 0.664). Based on the table model 5 regression result the effect of the interaction term on customer satisfaction is positive and significant (Standardized Beta=0.531,  $p < 0.05$ ) and this is support the proposed hypothesis 2 and in line with empirical researches (Caruana, Money, Berthon ,2000; Ismail, Abdullah, Parasuraman, 2009; Hyung Seok Lee, 2013). Thus, we accept  $H_2$  and reject null hypothesis.

#### **4.12.3 Service Failure**

**Hypothesis 3:** Service failure moderates the relationship between service quality and customer satisfaction negatively, such that the influence of service failure is considered when service failure incidents are few or non.

The moderated regression results in model 5 table 4.13 illustrates that the interaction term explained slight additional variances ( $\Delta R^2 = 0.011$ ,  $p < 0.05$ ) in the relationship between Service failure and Service quality this variation is statistically significant. Although the effect of this moderator on the Service quality and customer satisfaction relationship is small, the statistical significance tells that the addition of Service failure as a moderator influences the relationship between the dependent and independent variables. With the interaction effect, as shown in table 4.12 model 5, the full model explained a higher variance in customer satisfaction (R squared = 0.667). Based on the table 4.11 model 5 regression result the effect of the interaction term on customer satisfaction is negative and significant (Standardized Beta=-0.838,  $p < 0.05$ ) and this supported with what has been proposed in hypothesis 3. Service failure negatively moderates the relationship between service quality and customer satisfaction, implying that with high service failure the impact of service quality on customer satisfaction decreases and vice versa this hypothesis is in line with prior empirical researches (Walfried M. Chris Robert D 2000; Jeremiah, Ojera, Ochieng 2015)

4.13 Summary of Hierarchical Regression and Hypothesis Testing

Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig
Constant		.000		.010		.031		.002		.000		.044
<b>Control Variables</b>												
C1	.083	.702	-.001	.970	-.004	.915	-.015	.659	-.015	.663	-.028	.405
C2	-	.146	.026	.447	.011	.747	.010	.766	.013	.691	.013	.708
	.035											
C3	.022	.538	-.050	.149	-.047	.170	-.041	.220	-.046	.165	-.040	.225
<b>Direct Effect</b>												
Service Quality			.797	.000	.788	.000	<b>.786</b>	<b>.000</b>	.643	.000	1.334	.000
Perceived Value					.100	.004	<b>.091</b>	<b>.009</b>	-.398	.037	.084	.014
Service Failure							<b>-.082</b>	<b>.018</b>	-.076	.026	.559	.006
<b>Interaction effect</b>												
SQ*Perceived value									<b>.531</b>	<b>.009</b>		
SQ *Service Failure											<b>-.838</b>	<b>.002</b>
<b>R</b>	<b>.094</b>		<b>.800</b>		<b>.806</b>		<b>.810</b>		<b>.815</b>		<b>.817</b>	
<b>R<sup>2</sup></b>	<b>.009</b>		<b>.640</b>		<b>.650</b>		<b>.656</b>		<b>.664</b>		<b>.667</b>	

Table 4.14 Summary of Hierarchical Regression

Source: Own Survey, SPSSv23, 2019

Table 4.15 Summary of Hypothesis

	<i>Hypothesis</i>	<i>Result</i>
<b>H1:</b>	<i>Service quality is positively related to customer satisfaction in that organizations with higher level of service quality will have higher customer satisfaction ;</i>	<b>Accepted</b>
<b>H2:</b>	<i>Perceived value moderates Service quality and customer satisfaction relationship, such that the influence of Service quality on customer satisfaction is strongest when perceived value is considered;</i>	<b>Accepted</b>
<b>H3:</b>	<i>Service failure moderates the relationship between Service quality and customer satisfaction negatively, such that the influence of service quality on customer satisfaction is strongest when service failure incidents are few or non.</i>	<b>Accepted</b>

Source: Compiled from findings, 2019

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATION

#### 5.1. Summary of Findings

In this research the effect of Service quality (SQ) on customer satisfaction has been investigated both as direct main effect and interaction effect with perceived value and service failure as moderators. These relationships are examined using randomly selected data from ethio telecom enterprise customers that are found in Addis Ababa. All the variables and the respective measurements in this research are based on theory and adopted from literatures. The reliability and validity of the constructs and items were tested as per the recommendations made in literatures. To test the research hypotheses, moderated hierarchical regression analysis has been applied and the findings are summarized as follows.

Before the regression analysis the correlation between variables examined and it is confirmed that there is strong association between the independent and the dependent variables which is 0.798. This is an indication that Service quality has strong relationship with customer satisfaction. The correlation among the independent and moderator variables is moderate and free from multicollinearity problem.

At the start customer satisfaction ( $R^2 = 0.64$ ), this supports hypothesis 1 and it is in line with other findings in literatures., the effect of the control variables – Type of industry, length subscription, the type of broadband service on customer satisfaction were examined and were not statistically significant. Service quality has positive and statistically significant ( $\beta = 0.786$ ,  $p < 0.001$ ) effect on customer satisfaction. Service quality explained high variance in customer satisfaction.

Before testing the interaction effects with the moderators, the main effect of the contingency variables on customer satisfaction were tested and both have statistically significant effect ( $\beta = 0.091$ ,  $-0.082$ ,) for perceived value and service failure respectively,  $p < 0.001$ ). Together with service quality these moderators explained additional significant variance in customer satisfaction ( $R^2 = 0.667$ ,  $p < 0.001$ ).

To test hypothesis 2, the interaction effect of service quality and perceived value was analyzed together with the main effect it explained small but statistically significant and positive extra variation in customer satisfaction ( $\Delta R^2 = 0.008$ ,  $p < 0.001$ ).  $\beta = .531$ ,  $p < 0.001$ ), which is in line with hypothesis 2.

Similarly, on hypothesis 3, the finding on the interaction effect of service quality and service failure on customer satisfaction turned out statically significant and negative ( $\beta = -0.838$ ,  $p < 0.01$ ). This moderator also added slight variation in customer satisfaction. ( $\Delta R^2 = 0.011$   $p < 0.01$ ). This finding is also in line with what was proposed in hypothesis 3.

Generally, service quality has positive and significant effect on customer satisfaction in all combinations that are tested in this research. This informs that the universal positive influence of service quality on customer satisfaction also holds true here in ethioteleom. In addition, the two hypothesis regarding interaction of moderator variables are supported with the findings and the influence of Service quality on customer satisfaction is strongest when perceived value is considered and influence of service quality on customer satisfaction is strongest when service failure incidents are few or non.

## **5.2. Conclusions**

Based on the findings and summary the following major conclusions are drawn. From the correlation analysis it is concluded that there is a strong association between service quality and customer satisfaction. In line with hypothesis one, the findings of the regression analysis have shown that service quality explains reasonable variation in ethioteleom customer satisfaction with positive relationship and it is statistically significant. It is, therefore, concluded that service quality strategic position in ethioteleom enterprise customers play substantial role in customer satisfaction. This direct effect relationship is also supported by other literatures (Wang & Lo 2002; Ahmed et al., 2010; Saghier 2013; Androniceanu, 2017)

The direct effect analysis in regression with service quality, perceived value and decreased in service failure explained large variations in customer satisfaction indicating that they are strong predictors of customer satisfaction. The influence of Service quality on customer satisfaction is strongest when perceived value and reduction of service failure is considered.

From the moderated hierarchical regression analysis findings, it is deduced that perceived value positively moderated the relationship between service quality and customer satisfaction. This implies the interaction between service quality and perceived value explained more of the variance in satisfaction than the direct influence of either service quality or perceived value on customer satisfaction which is also supported by literature. (Caruana et al. 2000; Ryu & Han, 2010;) It is also concluded that lower service failure increases customer satisfaction of ethioteleom enterprise customers such that the influence of service quality on customer satisfaction is strongest when network failure incidents are few or non this is in line with previous empirical reviews. (Walfried M. 2000; Jeremiah, Ojera, Ochieng 2015)

### **5.3. Recommendations**

According to the research findings, the concluded notions and considering the upcoming telecom privatization the following main recommendations are forwarded:

- From the service quality dimensions, the mean value of Reliability was 1.75 indicating that respondents were disagreed and not satisfied with reliability of Ethio- telecom. This implies that the customers are not satisfied with the provisioning of broadband internet services of ethioteleom, which is broadband internet services are not delivered as promised. In addition, the mean value 1.80 of the responsiveness shows that customers are dissatisfied with the late response of the ethioteleom employees. On the other hand, the Customers agree on the Assurance, Empathy, and Tangible of Ethio-telecom which is courtesy, knowledge and the appearance of the company and staff.

Hence, the ethioteleom should work on the internet provisioning services and needs to ascertain that services are delivered as per the promised time and competent and engaged employees should be assigned in the company that can move with the dynamic telecom sector and the forthcoming competition with the provision of new ideas, proactive way outs to the customer and the company as well.

- The findings of this study confirm that perceived value moderates the relationship between service quality and customer satisfaction. Therefore, ethioteleom should consider the value of its customer while providing the broadband internet services and the company must assure that the price of the internet services is fair and in line with the

network quality of the company. Customers are dissatisfied when the price and sacrifice paid to get the internet services are greater from the service or the network quality they are receiving. In the near future the company will be privatized and customers may switch to another operator if the company is unable to consider the customers perceived value against its service quality. Ethio telecom should see perceived as a crucial aspect of customer satisfaction where perceived value may strongly induce positive subsequent customer outcomes.

- Based on the third conclusion positive relationship between service quality and customer satisfaction was moderated by service failure, and that service quality is a predictor variable which operates well if aligned with service failure to better influence customer satisfaction. Ethio telecom should formulate viable service strategies to minimize broadband service failure encounters in areas such as network congestions, frequent interactions, service down time and others. This can be achieved through network expansion in line with the subscriber base.
- The main reason for the current network congestions and interruption could be the growth of broadband users in line with the dramatic price revision of the company. In order to maintain quality network, ethio telecom should monitor the current capacity of the network and the coverage in line with price revision and subscriber base. Once the capacity is fully utilized, the entire customer base will experience congestions as the network capacity is a used shared basis. Therefore, the capacity of the network and the coverage should be planned and expanded with the increase of the customer base to provide core service or the broadband network excellence. Besides, proactive service recovery than reactive is required in order to satisfy ethio telecom customers which can be achieved through the deployment of new telecom technologies
- Proactive network recoveries before the acknowledgement of the customers should be accomplished on the broadband network failures to enhance customer satisfaction and to be competitive in the upcoming privatization. This can be achieved by installing latest telecom technologies that can alarm network workforces during and before internet failures, interruptions and congestions. Besides, rehabilitation on the fiber and copers of

ethioteleom networks should be done consistently to reduce the intermittent network failures.

- Predictive and preventive maintenances on telecom equipment's in order to minimize service down time and unexpected network failures.
- Customers should get equivalent broadband network speed with the monthly payments which can be achieved by replacing the outdated telecom equipment's, availing the network lines nearby to the customers, placing modern equipment's, reducing customers' monthly payment considering the network loss of the shared network.
- EthioTelecom should compensate broadband monthly payments for the consistence service down times, network interruption or congestions which can enhance the customer perceived value and customer satisfaction in return this can be achieved by incorporating benefits or reducing the price.

EthioTelecom which will be privatized in the near should consider customers perceived value and reduce service failures in order increase customer satisfaction and being competent in the market.

#### **5.4. Future Research**

- Further researches are required involving interaction of service quality together with other variables such as corporate reputation, service loyalty, purchase intentions and ultimately customer retention can be better understood.
- Other interaction effects could be further tested by taking each SERVQUAL dimensions with moderating variables. In addition, it can also be tested with other service quality models like SERVQUAL, hierarchal model and Nordic model.
- Perceived Value can also be used as mediating variable between service quality and customer satisfaction.
- There might be a certain degree of variation between different industry types and moderating variables.
- As it was mentioned in the scope of the research further longitudinal research is required to make certain for the generalizability of the actual relationship between service quality and customer satisfaction and the moderating relationship of perceived value and service failure.

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**Appendix I Broadband Mobile Internet Price in African Countries (2019)**

Table 2.8 Broadband Mobile Internet Piece in African Countries (2019)

<b>The price of broadband Mobile internet in different Africa Countries 2019</b>		
<b>Africa Countries</b>	<b>Average price of 1GB(\$)</b>	
Sudan	\$0.68	
Egypt	\$1.49	
Morocco	\$1.66	
Tanzania	\$5.93	
Nigeria	\$2.22	
Kenya	\$2.73	
<b>Ethiopia</b>	<b>\$2.91</b>	
Algeria	\$5.15	
South Africa	\$7.19	
Angola	\$7.95	
Djibouti	\$37.92	
Guinee	\$65.83	
Zimbabwe	\$75.20	

*Source Cable.co.uk, 2019*

Appendix II Questionnaires



**አዲስ አበባ ዩኒቨርሲቲ**  
**የቢዝነስና ኢኮኖሚክስ ኮሌጅ**  
**የማኔጅመንት ትምህርት ክፍል ድኅረ-ምረቃ መርሀግብር**

**ውድ የጥናቱ ተሳታፊ**

በቅድሚያ በዚህ ጥናት ላይ ለመሳተፍና መረጃ ለመስጠት ፈቃደኛ ስለሆኑ ልባዊ ምስጋና አቀርባለሁ።  
ይህ መጠይቅ *“The effect of service quality on customer satisfaction in case of Ethio telecom: Roles of Perceived Value and Service Failure”* በሚል ርዕስ ለሚቀርብ ጥናታዊ ጽሁፍ መረጃ ለመስጠት የተዘጋጀ ነው።

ጥናቱ የሚሠራው አዲስ አበባ ዩኒቨርሲቲ ኤክስኬዩቲቭ ማስተርስ ኦፍ ቢዝነስ አድሚኒስትሬሽን ሁለተኛ ደግሪ (EMBA) ያስቀመጠውን መስፈርት ለማሟላት በመሆኑ የሚሰበሰበው መረጃ ሙሉ በሙሉ ለትምህርታዊ ዓላማ ብቻ የሚውል ይሆናል። በመሆኑም መረጃው ምስጢራዊ ሆኖ የሚጠበቅ ሲሆን ከትምህርታዊ ሥራ በስተቀር ለሌላ ለምንም ዓላማ ጥቅም ላይ አይውልም። በመሆኑም ትክክለኛ መረጃ እንዲሰጡን በታላቅ ትህትና እንጠይቃለሁ ።

**ሰለትብብርዎ ከልብ እናመሰግናለን!**

Part One: Respondent Profile

ማሳሰቢያ:

- ✓ እባክዎት ለሁሉም ጥቁቶች መልስ ይስጡ።
- ✓ በመጠይቁ ላይ ስም መጻፍ አያስፈልግም።

1. ያታ

ወንድ

ሴት

2. ዕድሜ

ከ25 በታች

25- 35

36- 50

ከ50 በላይ

3. ከፍተኛ የትምህርት ደረጃ:

ዲፕሎማ

የመጀመሪያ ዲግሪ

ሁለተኛ ዲግሪ

ከሁለተኛ ዲግሪ በላይ

4. በድርጅቱ ውስጥ አሁን ያለዎት ቦታ ምንድነው?

IT Head

Management member

Network Administrator

Staff/end user

other

5. በዚህ ኩባንያ ውስጥ ስንት ዓመት ውስጥ ሰርተዋል??

1-3 ዓመት

4-6 ዓመት

6-8 ዓመት

8-10 ዓመት

10 ዓመት በላይ

ቀን የአገልግሎቱን መጠቀም የጀመሩበት ጊዜ፤ የሚሠሩበት ተቆም፤ የሚጠቀሙት የብሮድባን አይነት

6. የትኛው ተቆም ነው የሚሰሩት?

- |  |                                      |
|--|--------------------------------------|
| <input type="checkbox"/> መንግስታዊ ያልሆነ እና ኤምባሲ         | <input type="checkbox"/> የመንግስት ድርጅት |
| <input type="checkbox"/> የፋይናንስ ተቆም (ባንክ ኢንሹራንስ ወዘተ) | <input type="checkbox"/> የግል ተቆም     |
| <input type="checkbox"/> ምርት / ኢንዱስትሪ                | <input type="checkbox"/> የህዝብ ተቆም    |

7. የብሮድባንድ አገልግሎት አገልግሎትን መጠቀም ከጀመሩ ምን ያህል ጊዜ ሆኖት?

- |                                   |                                     |                                  |
|-----------------------------------|-------------------------------------|----------------------------------|
| <input type="checkbox"/> 1-3 ዓመት  | <input type="checkbox"/> 4-6 ዓመት    | <input type="checkbox"/> 6-8 ዓመት |
| <input type="checkbox"/> 8-10 ዓመት | <input type="checkbox"/> 10 ዓመት በላይ |                                  |

8. የሚጠቀሙት የብሮድባንድ አይነት የትኛውን ነው

- |  |                               |
|--|-------------------------------|
| <input type="checkbox"/> Fixed Broadband | <input type="checkbox"/> Both |
| <input type="checkbox"/> Wireless (EVDO) |                               |

**Part Two: - Questions related to Effect of service quality on customer satisfaction**

**1. ከአገልግሎት ጥራት ጋር የተዛመዱ ጥያቄዎች**

	<b>ተጨባጭ ሁኔታዎች (Tangibles)</b>	<b>በጭራሽ አልስማማም</b>	<b>አልስማማም</b>	<b>ሃሳብ የለኝም</b>	<b>እስማማለሁ</b>	<b>በጣም እስማማለሁ</b>
1	ኢትዮጵያ ኢንፎርሜሽን ቴክኖሎጂ አገልግሎት ዘመናዊ መሳሪያዎችን እና አዳዲስ ቴክኖሎጂ ይጠቀማል።					
2	የኢትዮጵያ ኢንፎርሜሽን ቴክኖሎጂ አገልግሎት ቁሳዊ እቃዎች (የቢሮ አቀማመጥ, የቢሮ እቃዎች ወዘተ) በንግድ ማዕከሎች እና አገልግሎት መስጫዎች ውስጥ ማራኪ ናቸው።					
3	የኢትዮጵያ ኢንፎርሜሽን ቴክኖሎጂ አገልግሎት ሠራተኞች (የሽያጭ ሠራተኞች; ቴክኒሻኖች) ጥሩ አለባቸው ያላቸው ማራኪ እና ጽዱ ናቸው።					
4	የኢትዮጵያ ኢንፎርሜሽን ቴክኖሎጂ አገልግሎት አቅርቦት (እንደ ሞደም, ኮፐር, ፋይበር እና ደንበኛው ሊገለገልባቸው የሚገቡ መሳሪያዎች) ከሚቀርቡት አገልግሎት ጋር የተጣጣመ ነው።					
	<b>አስተማማኝነት (Reliability)</b>	<b>በጭራሽ አልስማማም</b>	<b>አልስማማም</b>	<b>ሃሳብ የለኝም</b>	<b>እስማማለሁ</b>	<b>በጣም እስማማለሁ</b>
5	የኢትዮጵያ ኢንፎርሜሽን ቴክኖሎጂ አገልግሎት በታቀድልት ጊዜ እና ቃል በገባበት ጊዜ ለደንበኞቹ ይቀርባል ወይም አገልግሎቱ					
6	ኢትዮጵያ ኢንፎርሜሽን ቴክኖሎጂ አገልግሎትን ከመጀመሪያ ጀምሮ በትክክል ይተገብራል።					
7	ኢትዮጵያ ኢንፎርሜሽን ቴክኖሎጂ አገልግሎት የጸዳ የደንበኞች ዳታ መዘገብ ይይዛል።					
8	ኢትዮጵያ ኢንፎርሜሽን ቴክኖሎጂ አገልግሎት ችግር በሚገጥም ጊዜ ችግርዎን ለመፍታት ያለውን ፍላጎት በቅንነት ያሳያል።					
	<b>ምሊሽ ሰጪነት (Responsiveness)</b>	<b>በጭራሽ አልስማማም</b>	<b>አልስማማም</b>	<b>ሃሳብ የለኝም</b>	<b>እስማማለሁ</b>	<b>በጣም እስማማለሁ</b>
9	የኢትዮጵያ ኢንፎርሜሽን ቴክኖሎጂ አገልግሎትን መስጠት የሚመለከታቸው ሠራተኞች (እንደ ሽያጭ ሠራተኞች ፤ የደንበኞች አገልግሎት እና ቴክኒሻኖች) ለደንበኞች ፈጣን አገልግሎት ይሰጣሉ።					
10	የኢትዮጵያ ኢንፎርሜሽን ቴክኖሎጂ አገልግሎት ሠራተኞች ጉዳይዎ በምን ጊዜ እንደሚያልቅ ይገልጻሉ።					

11	የብርድባንድ ኢንተርኔት አገልግሎትን ለመስጠት የሚሳተፉ ሠራተኞች ሁልጊዜም ደንበኞችን ለመርዳት ፈቃደኛ ናቸው።					
12	የኢትዮ ቴሌኮም የሥራ ሰዓት ለሁሉም ደንበኞች ምቹ ነው።					
13	የኢትዮ ቴሌኮም ሠራተኞች ለደንበኞች አፋጣኝ ምላሽ ለመስጠት ሁሉም ደስተኞች ናቸው።					
	<b>መተማመኛ (Assurance)</b>	<b>በጭራሽ አልስማማም</b>	<b>አልስማማም</b>	<b>ሃሳብ የለኝም</b>	<b>እስማማለሁ</b>	<b>በጣም እስማማለሁ</b>
14	የኢትዮቴሌኮም ሠራተኞች ባህሪ በደንበኞች ላይ መተማመንን ይፈጥራል።					
15	የኢትዮቴሌኮም ሠራተኞች የደንበኞችን ጥያቄዎች ለመመለስ በቂ ዕውቀት አላቸው					
16	የኢትዮቴሌኮም ሠራተኞች ለደንበኞቻቸው ሁልጊዜ መልካም እና ትሁት ናቸው።					
17	በኢትዮቴሌኮም አሠራር እተማመናለሁ ፣ ደህንነትም ይሰማኛል።					
	<b>ግለሰባዊ ትኩረት (Empathy)</b>	<b>በጭራሽ አልስማማም</b>	<b>አልስማማም</b>	<b>ሃሳብ የለኝም</b>	<b>እስማማለሁ</b>	<b>በጣም እስማማለሁ</b>
18	የኢትዮቴሌኮም ሠራተኞች ለእያንዳንዱ ደንበኛ ትኩረት ይሰጣሉ።					
19	የኢትዮ ቴሌኮም ሠራተኞች ደንበኞች በጥሩ ሁኔታ እና በእንክብካቤ ያስተናግዳሉ።					
20	የኢትዮቴሌኮም ሠራተኞች የደንበኞቻቸውን ፍላጎት በሚገባ ይረዳሉ።					
21	በአጠቃላይ የኢትዮ ቴሌኮም ሰራተኞች የደንበኞቻቸውን ፍላጎት ለማሳካት ከልባቸው ይተጋሉ።					

1. ከሚከፈልበት ዋጋ ጋር የተያያዙ የጥናት ጥያቄዎች

	<b>የሚከፈልበት ዋጋ(Perceived Value)</b>	<b>በጭራሽ አልስማማም</b>	<b>አልስማማም</b>	<b>ሃሳብ የለኝም</b>	<b>እስማማለሁ</b>	<b>በጣም እስማማለሁ</b>
22	በጣም ጥሩ የብርድባንድ ኢንተርኔት አገልግሎት በተመጣጣኝ ዋጋ እያገኘሁ እንደሆነ ይሰማኛል።					



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## Structured Questionnaire



**Addis Ababa University**

**College of Business and Economics**

**Executive Masters of Business Administration**

**Dear Participant,**

This research questionnaire is designed to investigate **the Effect of Ethio telecom broadband Service quality on customer satisfaction with the interaction of perceived value and service failure.**

The purpose of the study is for the partial fulfillment of the requirements of Executive masters of business administration at Addis Ababa University, College of Business and Economics. For the successful accomplishment of the research, your genuine response has an important role and the responses will be used as a valuable and primary input for the study. For this reason, you are kindly requested to take few minutes of your busy schedule and genuinely fill this questionnaire.

**Confidentiality:** I would like to assure you that this research is only for academic purpose for Partial fulfillment of Executive Masters business administration at Addis Ababa University. No other person will have access to data collected besides, in any sort of report published, the researcher will not include any private information that will make it possible to identify any respondent.

**Thank you in advance for your genuine, honest, and prompt response!**

**Part One: Respondent Profile**

✓ Writing your name is not necessary.

✓ Put tick mark “√” for each question as required or answer the questions in the space provided.

## 1. Sex

 Male Female

## 2. Age (Years)

 Below 25 25- 35 36- 50 Above 50

## 3. Highest educational level

 Diploma Degree MA/ MSc Degree Above MA/MSc degree

## 4. Occupational information; what is your occupation?

 NGO & Embassy Government organization Financial institution (bank, insurance etc) Privet institution Production/Industry Public institution

## 5. What is your current position in the organization?

 IT Head Management member Network Administrator Staff/end user other

## 6. How long have you been working in this company?

 1-3 Years 4-6 Years 6-8Years 8-10 Years Above 10 Years

**Part Two: - Questions related to Effect of service quality on customer satisfaction**

**1. Questions related to Service quality**

No	Tangible	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
1	Ethio telecom has up-to-date equipment for broadband internet service.					
2	The physical facilities (such as office layout, furniture etc. )is visually attractive at the business centers of ET.					
3	Employees (frontline, sales personnel and technicians) of the service provider are well dressed and appear neat.					
4	Materials and equipment (such as modem, cooper, and fiber and customer premises equipment) is in line with the type of services provided.					
	<b>Reliability</b>	<b>Strongly disagree (1)</b>	<b>Disagree (2)</b>	<b>Neutral (3)</b>	<b>Agree (4)</b>	<b>Strongly agree (5)</b>
5	The broadband internet service is provided at the promised time					
6	When employees of Ethio telecom promise to do something by a certain time, they do so.					
7	Ethioteleom maintain error-free customer records.					
8	Ethioteleom provide appropriate & right broadband service starting from the first time.					
	<b>Responsiveness</b>	<b>Strongly disagree (1)</b>	<b>Disagree (2)</b>	<b>Neutral (3)</b>	<b>Agree (4)</b>	<b>Strongly agree (5)</b>
9	Employees who involve in the delivery of the broadband service (such as Front line, customer care, sales persons and technicians) give prompt service to customers.					
10	Employees who involve in delivery of the broadband internet service are always willing to help customers.					
11	Employees of ET tell customers exactly when the requested broadband service will be performed.					

12	Ethio telecom operating hours are convenient to all its customers.					
13	Employees of the Ethio telecom are never too busy to respond customers request promptly					
	<b>Assurance</b>	<b>Strongly disagree (1)</b>	<b>Disagree (2)</b>	<b>Neutral (3)</b>	<b>Agree (4)</b>	<b>Strongly agree (5)</b>
14	The behavior of ET employee creates confidence in the customers					
15	Employees of Ethio telecom have the knowledge to answer the customers questions					
16	ET Employees are consistently nice or courteous with customers.					
17	I feel safe in the operation of Ethio telecom					
	<b>Empathy</b>	<b>Strongly disagree (1)</b>	<b>Disagree (2)</b>	<b>Neutral (3)</b>	<b>Agree (4)</b>	<b>Strongly agree (5)</b>
18	Employees of Ethio telecom give customer individual attention.					
19	Ethio telecom employees deal with customers in a caring fashion.					
20	Ethio telecom employees understand the need of their customers.					
21	Overall Employees of Ethio telecom have their customer 's best interests at heart.					

**2. Research questions related to Perceived Value**

	<b>Perceived Value</b>	<b>Strongly disagree (1)</b>	<b>Disagree (2)</b>	<b>Neutral (3)</b>	<b>Agree (4)</b>	<b>Strongly agree (5)</b>
22	I feel I am getting good broadband services for a reasonable price.					
23	Using the broadband service provided by Ethio telecom worth for me to					

	sacrifice some time and efforts.					
24	The broadband service of Ethio telecom is not expensive for the quality it provides.					
25	I feel I am getting appropriate internet speed for what I have paid.					
26	Ethio telecom provides a reasonable compensation for broadband services failures.					

**3. Research questions related to service failure**

	<b>Service Failure</b>	<b>Strongly disagree (1)</b>	<b>Disagree (2)</b>	<b>Neutral (3)</b>	<b>Agree (4)</b>	<b>Strongly agree (5)</b>
27	I haven't faced intermittent network failure in Ethio telecom broadband internet service.					
28	The speed of Ethio telecom broadband internet service is good.					
29	Ethio telecom is proactive in explaining critical broadband internet problems.					
30	Ethio telecom resolve network failures very quickly.					

**4. Research questions related to overall customer satisfaction**

	<b>Customer Satisfaction</b>	<b>Strongly disagree (1)</b>	<b>Disagree (2)</b>	<b>Neutral (3)</b>	<b>Agree (4)</b>	<b>Strongly agree (5)</b>
31	Overall I am satisfied with Ethio telecom broadband service.					

*Thank You!*