ST. MARY'S UNIVERSITY COLLEGE

SCHOOL OF GRADUATE STUDIES

DEPARTMENT OF MBA ACCOUNTING AND FINANCE

EFFECT OF SERVICE QUALITY ON CUSTOMER SATISFACTION: THE CASE OF KIFIYA FINANCIAL TECHNOLOGY P.L.C.

BY

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JUNE, 2017

ADDIS ABABA

EFFECT OF SERVICE QUALITY ON CUSTOMER SATISFACTION: THE CASE OF KIFIYA FINANCIAL TECHNOLOGY P.L.C.

A THESIS SUBMITTED

TO THE DEPARTMENT OF MBA in ACCOUNTING AND FINANCE

ST. MARY'S UNIVERSITY COLLEGE

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF MASTERS OF BUSINESS ADMINIDTRATION

IN ACCOUNTING & FINANCE

BY

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Addis Ababa, Ethiopia

June 2017

ST. MARY'S UNIVERSITY COLLEGE

This is to certify that the thesis prepared by Bilen Kelemework, entitled: *Effect of Service Quality on Customer Satisfaction in the case of Kifiya Financial Technology P.L.C.* and submitted in partial fulfillment of the requirements for the degree of MBA in Accounting and Finance complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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DECLARATION

I, the undersigned, declare that this thesis is my original work and has not been presented for a degree in any other university and that all sources of materials used for the thesis have been dully acknowledged.

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ENDORSEMENT

This thesis has been submitted to St. Mary's University School of graduate studies for examination with my approval as a university advisor.

Abebaw Kassie (PhD) _____

Advisor Signature

St. Mary's University, Addis Ababa June 2017

ACKNOWLEDGEMENT/S

First of all, I would like to thank almighty God who has been giving me everything to accomplish my study and this thesis: patience, health, wisdom, and blessing.

I would like to express my sincere gratitude to my advisor Dr. Abebaw Kassie for his precious comments and suggestions during the course of this study. I am grateful to his invaluable comments and suggestions from which I have benefited a lot. In addition to his contribution to this thesis, I also like to thank his thoughtful contributions to my stock of knowledge.

I need to say 'thank you' to the participating persons who gave me such great support, and the respondents, without whom this research would have not been possible. My special gratitude and thanks goes to Ato Alemu Gelaye from Bahirdar KFT, Ato Alemayehu Tsehaye and Wrt. Tselot Rede from Mekelle KFT and lastly Ato Surafel Seifu from Kifiya P.L.C. for giving me such attention and time.

I am extremely indebted to my husband and family members, who had faith on me to accomplish what I started, and for their support & encouragement throughout my life.

Lastly but most importantly, I would like to express my deep gratitude to the staffs and managers of the Lehulu center who participated in this study during the data collection process.

ABSTRACT

The major objective of the study is to evaluate the service quality of Kifiya Financial Technology PLC especially in relation with the unified billing system (LEHULU). The unified billing system (UBS), is one of the e-Gov initiatives by the Ministry of Communication and Information Technology (MCIT), to unify the billing payment system of various utilities for the convenience and benefit of citizens. A sample of 250 customers was selected using stratified sampling technique and among these 235 was considered. For the purpose of the study the primary data were collected using Likert scale based questionnaire. And the data was analyzed using descriptive statistics. The result of this study shows that there was significant relationship between empathy, tangibles and assurance dimension with customer satisfaction and also insignificant relationship among reliability and responsiveness dimension. The finding of the study indicated that the service quality dimension (assurance, empathy and tangibles) have a positive and significant impact on customer satisfaction at Lehulu. Most customers of Lehulu were less satisfied with the assurance dimension. Basing the findings of the study, it is recommended that the KFT should work more on building staff behavior by showing a well manner and developing adequate knowledge among their customer to get customer satisfaction.

Keywords*, service quality, unified billing system, customer satisfaction, SERVQUAL*

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ABBREVIATIONS

SSA - Sub-Saharan Africa

GTP I - First Growth and Transformation Plan

SDPRP - Sustainable Development and Poverty Reduction Program

MDG - Millennium Development Goals

GTP II - Second Growth and Transformation Plan

MCIT - Ministry of Communications and Information Technology

UBS – Unified Billing System

KFT – Kifiya Financial Technology P.L.C.

PPP - Public Private Partnership

TV – Television

PSP - Private Sector Participation

IMF - International Monetary Fund

BOOT - Build, Operate, Own & Transfers

BOO – Build, Operate and Own

BDO - Build Design Operate

P3 - Public Private Partnership

ICT – Information Communication Technology

CRM – Customer Reconciliation Management

SERVQUAL – Service Quality

FLE - Front-line employees

EEPCO - Ethiopian Electric Power Corporation

AAWSA – Addis Ababa Water and Sewerage Authority

EBC – Ethiopian Broadcasting Corporation

PZB – Parasuraman, Zeithaml and Berry

SPSS - Statistical Package for the Social Sciences

Mgt – Management

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The state of infrastructure in many developing countries tends to be poor and inadequate to meet the rising demand. This reveals the constraints that governments in developing countries and especially in sub-Saharan Africa (SSA), face in terms of scarcity of funds, corruption, poor planning and project formulation, as well as inefficient capacities. Adequate physical infrastructure is a key element of a sound investment climate and development agencies can help countries mobilize private investment through on relevant infrastructure. Over the past two decades' governments in developing countries (and several developed countries as well) have embarked on radical structural reforms, encompassing restructuring and privatization of infrastructure sectors and a new approach to regulation. One prong of this new strategy involves public-private partnerships to provide infrastructure. In public-private partnerships, the public and private sectors join forces to design, finance, build, manage or maintain infrastructure projects. Such partnerships can take many forms, depending upon the exact allocation of risks and responsibilities (Thomsen, 2005).

As a strategy that the Ethiopian Government pursued during the First Growth and Transformation Plan (GTP I) for the Sustainable Development and Poverty Reduction Program (SDPRP) was Enhancing expansion and quality of infrastructure development. Mainly focuses on growth with a particular emphasis on greater commercialization of agriculture and enhancing private sector development, industry, urban development and a scaling up of efforts to achieve the Millennium Development Goals (MDGs). This strategy also emphasizes on Second Growth and Transformation Plan **(**GTP II) as build the capacity of the domestic construction industry, bridge critical infrastructure gaps with particular focus on ensuring quality provision of infrastructure services. Expansion of infrastructure development such as road, railway, dry port, air transport, energy, telecommunication, water and irrigation schemes which resulted in attracting investment, creating market opportunities, enhance competitiveness and boost regional economic integration will have a special consideration in GTP II (Desie, 2016).

The e-Government strategy has a customer-centric focus so as to facilitate the delivery of services and information through alternate channels in a manner that is convenient for the citizens and is in line with their expectations and aspirations. Life cycle based representation of services is a powerful tool towards this end and therefore, the strategy envisages the use of life-cycle events while electronically enabling the services. (MCIT Report, 2011)

The Ministry of Communications and Information Technology (MCIT) initiatives programs in Ethiopia, Unified Billing System is a facility for payments of utility bills at one-stop shop electronically. The system will provide unified single payment window to customer, manage the billing cycle and service center operation electronically, provide of payment collection for customer's convenience (any place, unified) and provide an electronic service to citizens/customers. The system also integrated government agencies (Ethiopian Electric Utility, Addis Ababa Water and Sewerage Authority, Ethio Telecom, Ethiopian Broadcasting Corporation and TRANSPORT AUTHORITY) through integrated system to attain quality service.

In Public Private Partnership (PPP) with the Ethiopian Ministry of Communication and Information Technology launched eService Centers known as "Lehulu" in Addis Ababa in February 2013.

The Amharic word "Lehulu" implies a dual meaning, "for everyone" and "for all services." The centers are based on a "Build, Own, Operate, and Transfer" model to deliver bill payment services for five utilities – water, electricity, telephone, annual TV subscription and traffic penalty – in any one of the new locations. For the first time in Ethiopia, citizens have been provided with the convenience of one-stop service to pay their utility bills anywhere, quickly and easily, during extended working hours, accompanied by an unparalleled level of customer service.

The main objective of this study is to assess the service quality of unified billing system that provided by Kifiya Financial Technology. This study contributes to service quality literature by providing empirical evidence that increase the body of knowledge in understanding the factors that influence the quality service. Furthermore, the study used to understand factors determining the service quality of UBS.

1.2 Statement of the Problem

According to Stephen, Kenneth & Brain (1999), government have a responsibility to design the delivery of government services based on the needs of citizens. Citizens want and gave a priority in government services that are easy to find and access. Government must take citizen-centered approach to service delivery. Citizens want government services that are as accessible, convenient and seamless as possible. One way of achieving this is through single-window service delivery. -

The essence of the single-window approach is the bringing together of government services, or information about them, in order to reduce the amount of time and effort citizens must expend to find and obtain the services they need. While single-window service is only one of several approaches to improving service to citizens, it has become an increasingly important one. (Stephen, Kenneth & Brain, 1999).

Given the shortage of public funds in most developing countries, the obvious solution is to invite greater private sector participation, but this too is problematic since investing in infrastructure projects in many parts of the world is not financially viable from a private sector perspective. One solution is to expand the use of public-private partnerships (PPP) in utilities, to enhance the quality of projects, reduce risks and raise profitability.

Satisfying customers is the first major mission and purpose of any business organization. It is when customers are satisfied that the organizations achieve higher sales, profit and market share and vice versa. Customer satisfaction also leads organizations to gain loyalty and achieve the desired objectives. Therefore, it is essential for organizations to satisfy their customers promptly so that they can achieve what they plan. Utility agencies as a business organization should provide a great care for its customers' to attract, retain and gain their loyalty.

Utility companies are not satisfying their customers enough due to many factors in which using traditional technologies among them. Levesque and McDougall (1996) have confirmed and reinforced the notion that consistent poor customer experience as a result of poor service quality leads to a decrease in the levels of customer satisfaction and the chances of further willingness to recommend the service (i.e., word-of-mouth advertising or referrals) is lessened.

Customers of the utility agencies have not been satisfying with the service rendered by the agency. This is due to poor service quality of the agency that results from absence of new and improved

technologies.

Ministry of Communication and Information Technology, Electronic Services Initiative i.e., 'Lehulu' unified billing system, has taken up the challenge of bringing about the necessary changes to provide a better quality of service to citizens. It has undertaken a number of e-Government assignments to avail government services online and improve the access to the general public.

The research paper aims to evaluate the availability of good integrated payment system, to examine the contribution of this newly introduce unified billing system on customer's satisfaction, to understand the factors that influence the quality service of Lehulu and also to measure and compare a single captive window where all the people living in the city of Addis Ababa, Bahirdar and Mekelle areas can avail numerous government services under one roof within stipulated time frame.

1.3 Research Questions

The research questions of the study are:

- Do the subscribers perceive different level of satisfaction regarding to paying their bills from different utilities agency than that of paying bills in the Lehulu center?
- Do the utility subscribers perceived different level of convenience regarding to the working hours of Lehulu center to pay bills than that of utility agencies?

1.4 Research Objectives

The general objectives of this research paper is to evaluate customer satisfaction with the quality of services offered by Kifiya Financial Technology.

However, the specific objectives of the study are as follows:

- To analyze the effect of reliability on customer satisfaction
- To examine the effect of assurance on customer satisfaction
- To evaluate the effect of responsiveness on customer satisfaction
- To study the effect of empathy on customer satisfaction
- To assess the effect of tangibility on customer satisfaction

1.5 Limitation of the Study

This study was undertaken to evaluate service quality of unified billing system in KFT. Therefore, it was limited to the changes that come after the introduction of unified billing system (Lehulu). Moreover, the project focus area is only Addis Ababa, Bahirdar and Mekelle Lehulu customers; the result will not be extended to other customers of KFT.

The potential limitation of the study is that due time and monetary constraints, the study population was restricted to selected Lehulu centers that are located in Addis Ababa and regions. If the study includes all Lehulu center customers, the conclusion of the study might change.

The customers' desire is hot-tempered particularly now a days than ever before, and the basics of satisfaction differ from one to another, it will be complex to conclude the exact picture rather than showing indicator.

1.6 Significant of the study

The outcomes and results of this research will have potential value to share experience, particularly stakeholders to understand the challenges and opportunities related with adoption of new technology and its advantages in providing service to their customers. In addition, this study expected to help other researchers who will be interested to conduct further study regarding the issue under investigated by providing useful information. Finally based on the factors found to be influencing stakeholders " Integrated Electronic Payment System", the study may provide recommendations for public service delivering sector about changes needed to accelerate adoption of the system to deliver service to customers through technological innovation.

1.7 Organization of the Study

The research paper is divided into five chapters. Chapter one presents the introduction part, which contains, background of the study, statement of the problem, research questions, research objectives, limitations of the study and significance of the research paper. Chapter two presents the literature review regarding the definition, Evolution of the system, frameworks for the research and sets out some empirical studies regarding the issues under investigated. Chapter three presents research methodology, which contains four basic headings: first, introduce research purpose; second the research approach used in the study, third, research strategy, and finally the research method adopted. The research results and discussion is presented in chapter four. The final part chapter five summarize the findings, concludes the paper, and forward some recommendations.

CHAPTER TWO

LITERATURE REVIEW

The purpose of this chapter is to review the literature in the area of service quality and mainly focused on the adopting utility payment system. This review of literature establishes a framework, which can guide the study, theoretical, empirical and conceptual framework.

PART I. THEORETICAL FRAMEWORK

SECTION 1

General Background

The service industry plays an increasingly important role in the economy of many countries. Customer needs and expectations are changing when it comes to governmental services and their quality requirements. The public sector is under increasing pressure to demonstrate that their services are customer-focused and that continuous performance improvement is being delivered. Services unlike tangible products are produced and consumed at the same time in the presence of the customer and the service producer. Service quality in all service encounters is thus intrinsically affected by the perspectives of both the service provider and the service receiver. Most research on the service quality construct has been restricted to one perspective: that of the service receiver. (Prabha, Soolakshna & Perunjodi, 2010).

What motivates a customer to settle an outstanding bill seems to relate mainly to the overall quality of the service provided by the utility. Poor service quality (which is unreliable supply, poor customer relations, poor billing and collection systems, and so on) deliberately delaying payments, especially when the service is unreliable. Service delivery issues such as reliability, poor customer service, poor billing systems and delivery will result the utility companies will be in position to bear & cover operational and anticipated costs.

One important utility in an economy is telecommunication. This is because it is the means through which all daily transactions and activities are undertaken. Due to the poor performance of many of these telecommunication firms, particularly in the developing countries, governments have had to

intervene through divestiture and privatization programs (Frempong and Henten, 2004). The presence of the new firms introduced service quality, appropriate and reasonable pricing and social responsibility.

Haywood-Farmer Service Quality Model

Haywood-Farmer (1988) discussed a service quality model including three basic attributes as physical facilities, processes and procedures, people behavior and conviviality, and professional judgment. The service quality attributes of Haywood-Farmer were associated to service quality determinants of Parasuraman et al. (1985). This model and its association with Parasuraman et al.'s Service Quality Determinants (1985) was shown as follow:

According to a study of Parasuraman et al. (1985), tangibles was a service quality determinant. Physical facilities, processes and procedures: location, layout, size, decor, facility reliability, process flow and flexibility, capacity balance, control of flow, range of services was a result of a study by Haywood-farmer (1988).

Reliability, Responsiveness, Access, Courtesy and Communication were also additional service quality determinants which was identified by Parasuraman et al. (1985). The attributes for these determinants identified by Haywood-Farmer (1988) are People behavior and conviviality: timeliness, speed, communication, warmth, friendliness, attitude, tone of voice, dress, neatness, politeness, anticipation, handling complaints, solving problems.

Another service quality determinant introduced by Parasuraman et al. (1985) was Competence, Credibility, Security and Understanding consumer. Also the study performed by Haywood-Farmer (1988) stated the attributes which was: Professional judgment: diagnosis, advice, guidance, innovation, honesty, confidentiality, discretion, knowledge, skill.

SECTION 2

2.1 Introduction

Building and operating infrastructure facilities as well as the delivery of basic services have predominantly been the responsibility of the public sector as they involve huge investment costs and take long time for the returns on investment to be realized. However, it has proved very difficult for many governments to meet the growing demand for infrastructure facilities and basic services by themselves. The inability of the public sector (government) to provide infrastructure and deliver services affects the promotion and expansion of businesses in communities. As a result, governments in several countries have been increasingly engaging the private sector in the provision of infrastructure facilities, investments in operation and maintenance of facilities as well as the delivery of basic services through PPP arrangements. (**Asubonteng, 2011)**

2.2 PUBLIC PRIVATE PARTNERSHIP (PPP)

As per the reference guide, (World Bank Publication, 2014), the overall broad definition of PPP, as a 'long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility, and remuneration is linked to performance.

Public Private Partnership can be defined according to Asubonteng (2011), as an arrangement between a public body and a private party or parties (including community beneficiaries) for the purpose of designing, financing, building and operating an infrastructure facility that would normally be provided by the public sector. In other words, PPP is a contractual agreement between a governmental organization and a private party whereby the latter performs whole or certain parts of the government organization's service delivery, infrastructure provision or administrative function, and assumes the associated risks. In return, the private party receives a fee which may take the form of user charges or direct payments from the government in accordance with the pre-defined performance criteria.

The term "public–private partnership" describes a range of possible relationships among public and private entities in the context of infrastructure and other services. Other terms used for this type of activity include private sector participation (PSP) and privatization. While the two terms

have often been used interchangeably, there are differences like PPPs present a framework that, while engaging the private sector, acknowledge and structure the role for government in ensuring that social obligations are met and successful sector reforms and public investments achieved. (Asian Development Bank, Handbook)

PPPs refer as per International Monetary Fund, (2004), arrangements where the private sector supplies infrastructure assets and services that traditionally have been provided by the government. PPPs are involved in a wide range of social and economic infrastructure projects, but they are mainly used to build and operate hospitals, schools, prisons, roads, bridges and tunnels, light rail networks, air traffic control systems, and water and sanitation plants.

A Public Private Partnership, or PPP, involves government and private sectors working together to deliver infrastructure or services that are traditionally provided by government. It involves private financing, construction and management of key infrastructure with the primary objective of improving public services. PPPs focus on service outcome, not assets. (Mishra, 2011).

2.2.1 Benefits of PPP

The study conducted by Mishra (2011) identified the need for a PPP mode of project implementation is a necessity for the following reasons:

- To enhance public services management and expedite the implementation
- To accelerate infrastructure provision and bridge the huge infrastructure gap
- To provide opportunity to local private sector to gain experience and work with the government
- To address national inequalities
- To overcome barriers of social, economic and geographical isolation
- To increase access to information and education
- To enhance the government capacity to manage the relationship with the private partner as well as manage the changes associated with the shift from traditional to digital paradigm.

Benefits of PPP for Government and Taxpayers

A study conducted by Mishra (2011) stated the benefit of PPP for the side of government as well the taxpayers. Those are:

- Improve service delivery (allowing both sectors private/gov't to do what they do best)
- Improve cost-effectiveness (by taking advantage of private sector innovation, experience & flexibility)
- Increase investment in public infrastructure (can reduce gov'ts capital costs, helping to bridge the gap between the need for infrastructure and the Province's financial capacity)
- Reduce public sector risk (by transferring to the private partner those risks that can be better managed by the private partner)
- Deliver capital projects faster, (making use of the private partner's increased flexibility and access to resources.)
- Improve budget certainty. (Transferring risk to the private sector can reduce the potential for government cost overruns from unforeseen circumstances during project development or service delivery. Services are provided at a predictable cost, as set out in contract agreements.
- Make better use of assets. (Private sector partners are motivated to use facilities fully, and to make the most of commercial opportunities to maximize returns on their investments.)

Benefits of PPP for the Private Sector

Also study of Mishra (2011) identified the benefit for the private sector which listed below.

- Can give access to secure, long-term investment opportunities.
- Can generate business with the relative certainty and security of a government contract.
- Payment is provided through a contracted fee for service, or through the collection of user fees – and
- The revenue stream may be secure for as long as 50 years or more.
- Private sector partners can profit from P3s by achieving efficiencies, based on their managerial, technical, and financial and innovation capabilities.
- They can also expand their P3 capacity and expertise – or their expertise in a particular sector – which can then be leveraged to create additional business opportunities.

2.2.2 Model of PPP

The study of Stephen Thomsen (2005), showed that the public-private partnership can take on very different models. There are various options of PPP models including service contracts, management contracts, lease agreement, franchise, joint venture, concession, BOT (Build, operate, own & transfers) and BOO (Build operate and own).

According to the study of Thomsen (2005), the most common forms of PPP in utilities, in public-private partnerships, the public and private sectors join forces to design, finance, build, manage or maintain infrastructure projects. Such partnerships can take many forms, depending upon the exact allocation of risks and responsibilities. As per the research, his findings presented as follows:

- ***Build Design Operate (BDO).*** The public authorities entrust the private operator for a fixed period of time with design, construction and operation of new facilities which remain the property of the public authorities. The private operator assumes the risks linked to design and management of the facility. It is paid a fee by the public authorities and commits to an overall cost for the facility's construction and operation.

- ***BOT (Build Operate Transfer).*** The private operator designs, finances and builds infrastructure. While formal ownership of the assets is assigned to the government, the private sector operates the project long enough to service any debt incurred and to earn a suitable return.

- ***BOO (Build Own Operate)***: In contrast to the BOT case, the private investor retains ownership and control of the project.

2.2.3 PPP in Ethiopia

Despite the multi fold benefit of PPP, its engagement and implementation in Ethiopian context is still in infant stage.

As per the study conducted by Addis Ababa Chamber of Commerce Sectorial Associations (AACCSA) in collaboration with Swedish Agency for International Development Cooperation, SIDA, depicts that the existence of piloting activities in form of PPP or another.

The scope of the PPP initiatives cover as per the study includes housing, construction of side road pavements, dry waste management and recycling services, agro and food processing, irrigation for small-scale farming, management of Addis Ababa City Government Exhibition Centre, textile and garment processing, prepaid metering and unified metering. In addition to this the research has demonstrated the existing potential PPP in various sectors of public service where some initiatives, pilots and engagements started and on other hand untapped potentials waiting to be closely studied and utilized. (Asubonteng, 2011)

Unified Billing System (UBS) The Unified Billing System (UBS) is one of the flagship projects in ICT sector that is being implemented on the Build Own Operate Transfer (BOOT) model. The Private partner shall Build Own and Operate Utility Bill collection centers and will eventually transfer the entire system to the Government at the end of the PPP contract. 40+ UBS centers are planned to be established as part of the project, to act as one stop shops for payment of bills for power, water and telecom. It is recommended that these centers may be upgraded to offer all the e-Services as Common Services Centers after the pilot has been successfully accomplished. (Mishra, 2011).

SECTION 3. ELECTRONIC PAYMENT SYSTEM

In 2011, Kah-Wei Chong define a single window system as a facility that allows parties involved in trade and transport to lodge standardized information and documents with a single entry point to fulfil all import, export and transit-related regulatory requirements. He also stated that If information is electronic, then individual data elements should only be submitted once.

A study conducted by Abeywickrama and Wickramaarachchi, (2015), on the challenges of implementing single window concept theoretically described these concept as a system that allows traders to lodge information with a single body to fulfill all import or export related regulatory requirements. Their study states that in practical terms single window environment provides one entrance, either physical or electronic, for the submission and handling of all data and documents related to the release and clearance of an international transaction. As per there finding, this entrance is managed by one agency, which informs the appropriate agencies and direct combined controls.

Paul, Gerard and Arne (1997) have found on their study that make a distinction b/n electronic transaction and electronic payments. Up on their findings electronic payment deals with the actual money transfer while electronic transaction deals with the whole transactions. These whole transactions are very important in electronic commerce system and includes service delivery, service acceptance, confirmation of payment, receipts, etc.

The study carried by Paul, Gerard and Arne (1997) identified two main requirements for parties needing to participate by having a similar interest within electronic commerce. The requirements are:1) Customers and Merchants, and 2) Financial Institutions and Regulators.

1. Requirements for Customers and Merchants

According to the study performed by Paul, Gerard and Arne (1997), customers and merchants do have a common set of wishes and concerns for electronic commerce mechanism. Those concerns are:

- **Security**: electronic currency is just data and can easily be copied. So it has to be assured that on-one else can divert a payment or impersonate another person in order to steal his funds. The security must be verified publicly.
- **Acceptability**: a wide range of parties needs to accept the payment.
- **Convenience**: the physical effort required during a transaction like a small payment should be minimum. This includes but not limited to speed, reliability, fungible (the currency or payment unit should be divisible), transferability and minimal specific hardware.
- **Cost**: transaction costs includes any direct costs at the customer, merchant and at any intermediary as well as processing or handling time for all parties and it is preferable no additional cost.
- **Privacy**: in electronic payment, external parties rather than the user do not have an access to have every individual cash transaction records.
- **Durability**: when there is a crash of the system, the data's should not be easily lost like the paper one.

2. Requirements for Financial Institutions and Regulators.

The financial institutions that will provide services to enable these transactions in the marketspace, and regulators will also have a set of requirements for a payment mechanism.

- **Immediate Control**: Financial institutions and regulators will seek a system in which transactions are controlled or cleared individually so that any breach of security can identified as soon as possible.
- **Traceability**: Financial institutions and regulators will seek a system in which transactions are traceable so that if a crime is detected the culprit can be identified.
- **Control over the spread of encryption mechanism**: a key concern of the government and regulatory body is to control the spread of encryption mechanisms.

3.1 Significant Factors in Payment and Settlement System

A payment system must be tailor-made or specially designed to meet and satisfy the unique requirements of a particular country (AEC, 2015). This means that each country is able to design the payment and settlement system according to its own characteristics. However, there are significant factors that should be complied with for the success of the systems. These factors are described as follows:

- **Speed**. Users must be confident that a payment, which has been initiated, will be completed to the right party for the correct amount and within a prescribed period of time.

- **Certainty.** A critical requirement in any payment system concerns certainty of payment, that is, the point at which funds are irrevocably available for use and there is settlement finality. Payments can carry immediate finality, so that the funds are irrevocably available for use without delay.

- **Reliability.** A payment system must be reliable if it is to maintain user confidence. Although no system will always operate faultlessly, all systems must have adequate contingency or fall-back provisions and controls, and adequate backup capabilities in case one or more major processing stations fail.

- **Safety and Security.** The safety and security of payments are important. Particular attention must be given to fraud control and credit risk control related laws and rules to resolve disputes promptly and fairly. Special attention must likewise be given to adequate arrangements for protection against unauthorized access or tampering with payment system data, and to a mechanism that will ensure confidentiality and minimize exposures among participants.

SECTION 4. SERVICE QUALITY

Different scholars agreed that service in general is not a tangible object that can be felt or touched. Zeithamal et al. (1990), emphasized that which distinguishes service from tangible products by characteristics of services like intangibility, perishability, heterogeneity and simultaneity.

According to Sahar & Mohammad, 2012, service quality has been defined as ‘‘the consumer’s judgment about a product’s overall excellence or superiority 'or ‘‘the consumer’s overall impression of the relative inferiority/superiority of the organization and its services'. The term quality has been generally defined by those researcher as “fitness for use” and “those product features which meet customer needs and thereby provide customer satisfaction”

Parasuraman, Zeithaml and Berry (hereafter referred to as PZB) (1985) define service quality as “the degree and direction of discrepancy between customers’ service perceptions and expectations” (2006). Thus if the perception is higher than expectation, then the service is said to be of high quality. Likewise, when expectation is higher than perception, the service is said to be of low quality. Also, Parasuraman et al. (1988) have defined service quality as the ability of the organization to meet or exceed customer expectations. By the definition of Zeithaml et al., 1990, it is the difference between customer expectations of service and perceived service.

Previous studying suggests that service quality is an important indicator of customer satisfaction (Spreng and Machoy, 1996). Attention to service quality can make an organization different from other organizations and gain a lasting competitive advantage (Boshoff and Gray, 2004). In particular, consumers prefer service quality when the price and other cost elements are held constant (Turban, 2002).

Service quality can be measured in terms of customer perception, customer expectation, customer satisfaction, and customer attitude (Sachdev & Verma 2004).

PART II. EMPERICAL FRAMEWORK

1. Electronic Payments

Paul, Gerald and Arne (1997) has done a study on the electronic payment methods and systems: a survey made in Netherlands. Their analysis revealed that many electronic payment systems are quite similar and differ only in some minor details. Such payment systems have different strengths and weaknesses with respect to their requirement. The findings from their study resulted that most payment systems have their own requirements. The researchers identified requirements for those payment systems are security, acceptability, ease of use, transaction cost, additional cost (e.g. point of sale hardware), privacy/traceability, durability and immediate control.

The study carried out by Abeywickrama and Wickramaarachchi (2015), conduct a research based on challenges of implementing single window concept to facilitate trade in Sri Lanka: A freight forwarder perspective which was a case study. This research is conducted through a qualitative approach with a structured questionnaire distributed to 30 freight forwarding companies. The analysis of the data collected shows that the most critical challenges of single window implementation are: lack of government support, inadequate coordination between stakeholder, organization and human resistance to change. Another finding of their study revealed that this one-stop facility allows exchange of information between all parties involved in trade, to reduce the complexity, time and costs.

Moertini, Athuri, Kemit and Saputro (2011) have found in their study, using a model, which assumes that avoiding and reducing risks throughout the development of an information system, specifically electronic payment system to handle tuition in the universities in Indonesia, is used for analysis of this case study. Up on their findings, the strategies that could be implemented to ensure the project success for handling tuition payment in the universities and basically to address the main issues that is efficiency, security, convenience, etc., in electronic payment are integrating the university system electronically.

A study conducted by Huang & Wang (2014) examines central billing system for personal bills and proposes a new central billing system for managing multiple bills. The study identified a lot of benefits that a system can provide in more convenient way of organizing and tracking bills. The finding from their study showed that for personal users it brings greater convenience, saving time

as well as resources as a result of receiving consolidated bill. And for billing organization, they can be benefited by saving manpower, costs and make a profit by charging a fee for the service.

A study conducted by M. H. and A. D. (2015), on the challenges of implementing single window concept theoretically described these concept as a system that allows traders to lodge information with a single body to fulfill all import or export related regulatory requirements. Their study states that in practical terms single window environment provides one entrance, either physical or electronic, for the submission and handling of all data and documents related to the release and clearance of an international transaction. As per there finding, this entrance is managed by one agency, which informs the appropriate agencies and direct combined controls.

2. Utility Service Providers

In 2014, a team of researchers led by Zeraebruk has conducted a case study on the water supply services and operational performance of Asmara state of Eritrea using semi-structured questionnaires with a systematic interviewing and direct observation. The analysis of collected data's showed that the water services provided by the water utility were unsatisfactory due to various factors such as: low service coverage, intermittent mode of water distribution, long-period of cut-offs, and poor management and customer care services. The findings from the research revealed that the quality of water services delivered in Asmara has been very low and the efficiency score is also very low. And also unsustainability of urban water services in Asmara in a context of limited resources, increasing demand, population growth and urbanization is another finding of their study. The results of their study emphasize the urgency of wide-ranging reforms needed by the decision makers in Asmara in order to achieve effective, efficient and sustainable water supply.

An in-depth survey of 2,216 residential customers responds on a research conducted and led by Smith on 2014 using an independent survey: historical records, published media and records that examines residential customer satisfaction for large electric utilities. The result of the survey emphasize that utilities should focus their attention on the rating scores rather than upon rankings based on the rating scores. The findings from their study shows that effective communications around outages and good predictions of restoration times, can help improve customer ratings of reliability and customer service. In addition, electric utilities need to be aware of how information and personal interactions with the company are forming those impressions.

In 2007, Mugabe, Kayaga and Smout conduct a research for the reason that water utility customers don't pay their bills promptly by using exploratory/qualitative research method with focus group discussion/interview and randomly selected sampling technique. Bases on the exploratory study found that a customer motivated to settle an outstanding water bill seems to relate mainly to the overall quality of the service provided by the utility. They explained that low-income levels are responsible for the low cost recovery levels in developing countries. As per their findings, this supporting that poor service quality is a key consideration for customer decision making to water bills regularly and promptly.

The group of researcher participated in a case study for E-government framework utilities payment in Egypt. The study was led by Ahmed in 1992 to examine efficient service provision can be achieved through restructuring services. The findings of a study reflected to extend congregated services to citizens regardless of their location or proximity to governmental service provider bodies. Based on their result, the framework will offer flexibility and convenience to the citizens to make their utility payments. As per their study, Citizens can initiate their utility payment 24 hours a day, seven days a week. As an added convenience, the framework allows citizens to schedule their utility payments in advance. Another result recognized by the research is e-government that anyone can access these services "anytime, anywhere" in the world. It is convenient and cost-effective for businesses, and beneficial to the public by getting easy access to the most current information available without having to spend so much time, energy and money to get it. These framework eliminates the need for physical travel to government agents, it is convenient and cost-effective for businesses, and beneficial to public by getting easy access to the most current information without having to spend time, energy and money to get it. The proposed framework, as per their findings, will also provide the facility for the citizens to pay their utilities using their cell phones. The other finding addressed by them is: the system is able to satisfy all security issues that are necessary for any secured and trusted system, and implementing latest antivirus program so that the system can prevent any vulnerable attacks and sort of unauthenticated access to it.

3. **Service Quality**

A study conducted by Parasuraman, Zeithmal& Berry, 1998, service quality was measured by using different variables in the SERVQUAL model. The findings from the study explored the measurement factors within the model. The result identified the variables in the model, namely: tangibles, reliability, responsiveness, competence, and courtesy, feel secure, communication and understanding the customer.

A case study carried out by Agyapong (2011) examines the relationship between service quality and customer satisfaction in the telecom utility industry in Ghana (Vodafone) by using multiple regression analysis. The target population of the study comprised 7,621 clients of Vodafone and by using a simple random sampling method. The researcher chosen the company because of the data was collected, the state had a major stake in the company. Also, customers were complaining about their services. The researcher also uses questionnaire as the main instrument for data collection. The finding of his study revealed that recruiting competent staff may be a critical aspect for customers in judging the quality of telecommunication services. And also addressed that there is a positive relationship between service quality and customer satisfaction.

The result of the study showed that among the service quality variables that significantly affected customer satisfaction include competence, courtesy, tangibility, reliability, responsiveness and communication and these findings has an important implication with regard to brand building strategies. The study documented that service quality is the dominant route to customer satisfaction and by giving customers what they want, when they want it can improve customer services. The research emphasize that telecom firms do not provide tangible products and their service quality is assessed by measures of the service provider's relationship with customers. In addition to that companies should pay attention to staff skill possession, knowledge, attention to customers and their need, offering of fast and efficient services and general attitude to customer services. As per the study, for improving upon customer satisfaction in the telecom services include confidentiality in transactions, trustworthiness, extension of working hours and provision of insurance for customers and also training their workers as the finding of the researcher.

In 2010, a group of researcher led by Munhurrun conducted a survey to obtain a better understanding of the extent to which service quality is delivered within the Mauritian public service by drawing on front-line employees (FLE) and customer perceptions of service quality. To

examine the gap between customers' general expectations of a service and their perceptions of the service the researcher uses an explanatory research method with descriptive analysis. The data were collected through a survey questionnaire by using a non-probability sampling technique. The sample size taken was 250 and out of that 202 questionnaires were collected. The result of the survey shown that there is a highest gap between customer perceptions and expectations exists in the reliability dimension. These indicated that public service departments needs improving awareness of its customers and employees' requirements. The second highest gap identified by their research is in the responsiveness dimension. This shows those public department needs to give more support to FLE. For assurance, there is a gap also and it indicated that the employees knew that they were not being courteous enough to customers as per the result. The fourth gap identified by the survey is in the tangible dimension. This showed both customers and employees perceived employees are well dressed and neat in appearance to the area of least importance. The last gap identified by their study is empathy. This shows that employees do not understand customers' needs and are not able to respond to those needs. The result of the analysis indicated that public service departments was failing to meet the expectations of their customer.

Akele 2012, conducted a research on the customer service quality in Ethiopian Electric Power Corporation (EEPCO) to assess and analyze the existing practice (quality) of prepayment customer service both from the employee and the Corporation's perspectives by using random and non-random sampling techniques. The study revealed that there is a substantial gap between customers' expectation and that of the service received, which has been adversely affecting the overall customer service experience with in the Corporation. The findings are sub standardized tangible offerings of the prepayment service itself (technical and non-technical aspects), defective and less user friendly meter and card, high employee turnover and job rotation without any prior arrangement, lack of adequate training and supply of necessary material, information and other supportive resources, lack of quick and efficient response to customers' complaints, inflexible working hours, senior management's inaction, putting pressure on the technology (prepayment) supplier, lack of visibility (awareness) and simplicity of the service to potential customers, due to the absence of an adequate promotion, and lack of persistent and reliable network (data communication) are the identified gap of the study.

Determining the status of service quality based on gap model in the insurance industry was a performed research by Siami and Gorji in 2012. The research method was an applied and survey

correlation type. The population of the research includes all managers, employees and customers of Iran's three insurance companies. They distributed five questionnaires and used a simple random and stratified sampling technique.

The authors developed SERVQUAL, a five-dimension scale which consumer evaluate service quality represent Tangibles, reliability, responsiveness, assurance and empathy. Parasuraman et al. (1985) think that the cognition level of service quality is evaluated by the difference between pre-sell service expectation and after-sell service perceptions. The model is mainly to explain the reason that the service quality of the service industry cannot meet the customer demands, and considers that in order to meet the customer demands, it is necessary to break through the five service quality gaps in the model.

Large & Konig (2009) presented a service quality gap model. The gaps identified by the author clarifies the gap between customer and organizations. The gaps were existed as listed: Gap 1: between customers' expectations and management's perceptions of those expectations. Gap2: between management's perceptions of customers' expectations and service quality specifications. Gap3: between service quality specifications and service delivery. Gap4: between service delivery and external communications to customers about service delivery. Gap: 5 between customers' expectations and perceived. As per their study the gaps resulted from the service provider which originated from the internal organization, and Gap 5 is decided by the customer, which originated from the difference between customer expectation and actual perceptions. The result of their finding showed that to satisfy the customer, the difference between customers' expectations and perceived needs to be shortened.

Parasuraman et al. (1988) used ten service dimensions as the foundation to develop 97 questions and adopted the concept of service quality is originated from the difference between customer expected service and cognition service, which is Q (service quality) = P (Perceptions) – E (Expectations),

The result of the study by Large & Konig (2009) showed that reliability is the most important and tangible dimensions are the least important factors at delivering an optimal insurance services.

Mukokoma and Dijk (2011) conducted a research to assess the gap between customer's expectations and his/her perception of the actual water service delivered by using a SERVQUAL

model in Uganda and Tanzania. The researchers used case studies and sampled 527 customers of national water and Sewerage Corporation and Dar es Salaam water and Sewerage Corporation to assess the service quality delivery gaps. The questionnaire was structured under five dimensions for evaluating expectation and perception while a dual case study was selected because of the different reform routes taken and differences in the performance levels. According to their study, the quality of water service delivery is a multi-dimensional construct which is analyzed using different dimension, and can identified the dimensions as tangibility, reliability, responsiveness, assurance and empathy. The importance of SERVQUAL dimension addressed by the researcher is to improve service quality and consequently customer satisfaction.

According to Zeithaml et al. [17] customers tend to be quite consistent in ranking service quality dimensions and their studies have shown reliability to be the most important dimension and tangibles the least important. A comparison between the service quality gap scores on the different dimensions and the importance weights attached to those dimensions indicates that on reliability which is scored highest in terms of importance has the widest service quality gap.

Mukokoma and Dijk (2011) used a theoretical framework to show the perceived service quality gap. The model shows that to assess the level of satisfaction with the service delivery one compares users' expectations with his/her perception of the service delivered. This comparison leads to the identification of the perceived service quality gap on the five dimensions. Clearly from the framework, service quality is the disconfirmation between the customer's expectations and perception of service performance. The study identified the service quality gap depends on the capability to minimize the difference between expected quality and perceived quality by customers. When expected service exceeds perceived service, quality is unsatisfactory. The result of their study indicates that the bigger the negative gap scores the higher the level of unsatisfactory performance. When expected service equals perceived service [zero gap score] quality is satisfactory. When perceived service exceeds expected service [positive gap score] then service level is more than satisfactory. The researchers found out that the service quality dimensions of reliability and responsiveness as very important to customers and these two dimensions have the biggest service quality gaps in the two countries utilities. The results imply that water utilities in Uganda and Tanzania should continue improving the quality of water service delivery by concentrating more on reliability and responsiveness of water service delivery. By improving

water service delivery, customer satisfaction would improve as well. The investments likely to yield the greatest improvement in customer satisfaction are those related to reliability and responsiveness. Their study indicated that the utilities should invest more in informing customers about water disconnections, providing prompt service, will and ability to help customers, keeping their promises with customers, being sincere in solving customer's problems, providing water at the promised times and keeping error free records.

4.1 SERVQUAL

Service in general is not a tangible object that can be felt or touched, which distinguishes service from tangible products. There are four basic characteristics of services: intangibility, perishability, heterogeneity, and simultaneity. Intangibility suggests that services are performances only experienced by the customer. Perishability indicates that a service cannot be produced and stored for future use. Heterogeneity reflects that the performance of the producer and customer's perception are often different from producer to producer, customer to customer, and from day to day. Thus, services are inherently variable and lack consistency. Lastly, simultaneity means the production of the services occur at the same time as consumption. Zeithaml et al. (1990).

Several scholars' defined service quality based on different theoretical assumptions and many models have been developed to measure customer perceptions of service quality. Basic study on the quality of service by Parasuraman and colleagues took place in 1998. Based on the definition of service quality, Parasuraman SERVQUAL words in a five-dimensional scale (feelings, reliability, response capabilities, ensures and guarantees, empathy) were spread widely within the various organizations has been used (Zeithaml et al., 2006). Research has shown SERVQUAL to be an effective and stable tool for measuring service quality across service industries (Bebko, 2000).

The SERVQUAL model represent, a five-dimension scale which is Tangibles, Reliability, Responsiveness, Assurance, and Empathy. The five dimensions by which consumers evaluate service quality. Based on the scope of the study, the researcher only uses the SERVQUAL Model.

4.2.1 Measurement of Variables

A study conducted by Parasuraman, Zeithmal & Berry, 1998, service quality was measured by using different variables in the SERVQUAL model. The findings from the study explored the measurement factors within the model. The result identified the variables in the model, namely: tangibles, reliability, responsiveness, competence, courtesy, feel secure, communication and understanding the customer.

Tangibles – PZB, 1988, have found on their study that explained the term tangibles as an appearance of physical facilities, equipment, personnel. Another study conducted by (Bebko, 2000), added communication materials as criteria for evaluating service quality by consumer beside these variable. Physical evidence and representations of the service, other customers in service facility also another research result of Parasuraman et al., 1985.

Reliability – on the same study, PZB 1988, the variable reliability described as an ability to perform the promised service dependably and accurately. The author Bebko, 2000 agreed with this concept. A study carried out by Parasuraman et al., 1985, recognized determinants of service quality that consumers used and the findings identified reliability as a consistency of performance and dependability, accuracy in billing, keeping records correctly, performing the service right at the designated time.

Responsiveness – another research finding from the study of PZB (1988), determine the responsiveness as a willingness to help customers and provide prompt service. Also a study carried out by Parasuraman et al., 1985, identified determinants of service quality and the findings explained responsiveness as willingness or readiness of employees to provide service, timeliness of service such as mailing a transaction slip immediately, calling the customer back quickly, giving prompt service.

Competence – also competence was clarified by PZB, 1988, as possession of required skill and knowledge to perform service. According to a study conducted by Bebko, (2000) the term competence used interchangeably with courtesy by word assurance. His study explained the word assurance as the knowledge and courtesy of employees and their ability to convey trust and confidence. In addition to this, the study by Parasuraman et al., 1985, showed possession of the required skills and knowledge to perform the service, knowledge and skill of the contact and

support personnel, research capability of the organization.

Courtesy – another finding from the study of PZB 1988, explained the variable as politeness, respect, consideration and friendliness of contact personnel. Another study conducted by Parasuraman et al., 1985 on determinants of service quality, the result of the study indicated as politeness, respect, consideration, friendliness of contact personnel, consideration for the consumer's property, clean and neat appearance of public contact personnel.

Feel secure – in the same context, the variable also clarified as a freedom from danger, risk, or doubt. A study carried out by Parasuraman et al., 1985, recognized determinants of service quality that consumers used and the findings identified freedom from danger, risk, or doubt, physical safety, financial security, confidentiality.

Communication – these measurement criteria also explained as listens to its customers and acknowledges their comments. Keeps customers informed. In a language which they can understand. (ZPB, 1988). Beside, keeping customers informed in language they can understand and listening to them, explaining the service itself and its cost, assuring the consumer that a problem will be handled was also another finding of Parasuraman et al., 1985.

Understanding the customer – these variable also explained as making the effort to know customers and their needs. (ZBP, 1988). Another study made by Bebko, (2000) described these concept as the caring, individualized attention the firm provides to its customers by the general word Empathy. Understanding customer needs, learning the customer's specific requirements, providing individualized attention, recognizing the regular customer was also another result from study of Parasuraman et al., 1985.

Access and Credibility were also another finding from a study of Parasuraman et al., 1985, for determinants of service quality that consumers used and the findings identified: ACCESS: approachability and ease of contact, the service is easily accessible by telephone, waiting time to receive service is not extensive, convenient hours of operation, convenient location of service facility. And CREDIBILITY: trustworthiness, believability, honesty, company reputation, having the customer's best interests at heart, personal characteristics of the contact personnel.

PART III. Conceptual Framework

Following from the literature review done above, variables of service quality for efficient service can be shown as following. In this conceptual model the five Service quality dimensions have been selected form the study conducted by Parasuraman et al., (1988).

As cited by Njihia, and Makori, (2015) a conceptual framework is a written product, one that explains, either graphically or in narrative form, the main things to be studied- the key factors, concepts, or variables and the presumed relationships among them. The researcher was used the efficient service as the dependent variable and the independent variables will be service quality dimensions those are reliability, responsiveness, assurance, empathy and tangibles as illustrated with the aid of the conceptual model below.

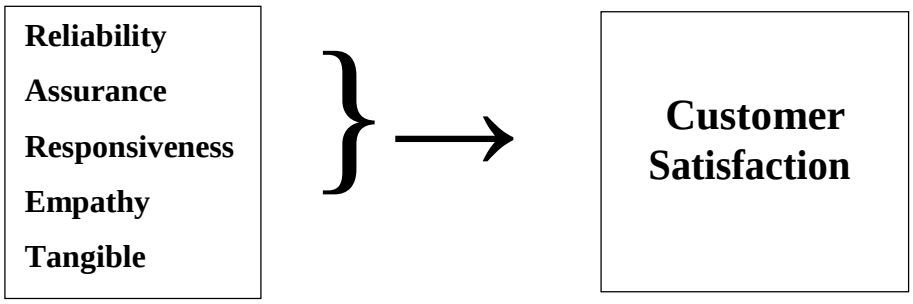
Parasuraman et al., (1985) conducted research on different service organization (Bank, Hotel, Electrical Corporation, Hospital, Transportation) by using ten service quality dimensions (tangibility, reliability, responsiveness, communication, access, competence, courtesy, credibility, security, and knowledge).

Abebe (2013) study on service quality of Commercial Bank of Ethiopia Bishoftu Branch by using dependent variable customer satisfaction and independent variables tangibility, reliability, responsiveness, communication, access, competence, courtesy, credibility, security, and knowledge of the branch.

Also Mukokoma & Dijk (2011) study on selected urban water service in Uganda and Tanzania used the dependent variable customer expectation and perception of the service delivered while independent variables are the five service quality dimensions those are tangibles, reliability, responsiveness, assurance and empathy.

Model

Conceptual framework for the service quality.



CHAPTER THREE

RESEARCH METHODOLOGY AND DESIGN

In this chapter, research design and methodology of the study consisted of six sections which were research design, target population, sample and sampling techniques, data collection techniques, reliability test and data analysis method.

3.1 Research Design

Research is a careful inquiry or examination to discover new information or relationship and to expand and verify existing knowledge. For this study the type of research was conducting is explanatory and descriptive type of research. Descriptive research is used to describe characteristics of a population or phenomenon being studied. In the course of the research qualitative and quantitative data were utilized. Qualitative research is used to gain an understanding of underlying reasons, opinions and motivation. Also qualitative research is used to uncover trends in thought and opinions, and dive deeper into the problem.

3.2. Target Population

According to Mason et al. (1997), the population of a study is the collection of all possible individuals, objects or measurements of interest. The general population of this research was all LEHULU customers of Kifiya Financial Technology PLC. Lehulu has total 35 centers in Addis Ababa, and 8 regional offices. Numerically, the total number of utility customers is 950,000 in Addis and 307,368.00 in regional offices. It will be very hard to attempt cover all these Lehulu customers. Time and financial limitations tended to narrow down the extent and depth of this study. Because of availability of Lehulu customers abundantly at a time of settling their utility bill at a center level, the study was focused by targeting 250 customers who are coming to settle their utility bill payment.

3.3 Sample and sampling techniques

The sampling technique that was used for the study was probability sampling techniques. In order to acquire sufficient information on both quality and quantity, the researcher was employ stratified sampling techniques.

Customers of the Lehulu were classified in to different groups (strata) based on their type and period. i.e. electric, water & telephone consolidated customers, only electric customers, only water customers, only telephone customers, television subscriber customers and traffic penalty customers and customers from each group were selected as a respondent using random sampling technique.

The size of strata i.e. utility customer in Addis is 950,000, the size of strata i.e. utility customers at Mekelle and Bahirdar is 307,368, and the size of strata i.e. annual television subscriber is 1,015 and the size of strata i.e. traffic violation is 33,300. (Source: KFT Financial Records)

The researcher was employ proportion allocation method to determine the sample size. The size of the sample from different strata was kept proportional to the size of the strata. Using the formula of proportional allocation n0=n*p0/N, the researcher takes a sample of 230 customers from utility customers in Addis and Regions, 10 customers from television subscribers customers, and to decide the sample size from traffic penalty customer the researcher uses average customer per day (i.e. using 10 percent of 100 customers per day which is 10). Therefore, the total sample size of this research was 250 customers.

3.4 Data Collection Techniques

Conducting appropriate data gathering instruments help researchers to combine the strengths and amend some of the inadequacies of any source of data to minimize risk of irrelevant conclusion. Consistent and reliable research indicates that research conducted by using appropriate data collection instruments increase the credibility and value of the research findings.

The data was collected from primary data source only. The main data collection instruments used for gathering primary data is through questionnaires (related with service quality and customer satisfaction), structured and semi-structured interviews and individual interview.

The questionnaire has two parts. These are:- Service Quality Questionnaire and Customer Satisfaction Questionnaire. The service quality questionnaire and also customer satisfaction questionnaire measures the Lehulu service quality by using a five-point Likert response scale.

Those questionnaires are prepared in the form of Likert-Scale type (showing respondents agreement or disagreement) by constructing into five-point scale where the 1 represent strongly dissatisfied (1), dissatisfied (2), neutral (3), satisfied (4) and strongly satisfied (5). To insure the reliability and validity of the questioner Cronbach's Alpha formula will be used to measure the reliability of the questionnaire. In this research raw data is changed into data structure that enables to generate meaningful and useful information.

3.5 Reliability test

Reliability is defined as be fundamentally concerned with issues of consistency of measures. (Bryman and Bell, 2003). According to Hair, et al., (2006), if α is greater than 0.7, it means that it has high reliability and if α is smaller than 0.3, then it implies that there is low reliability. Cronbach alpha has been employed to evaluate the reliability scale of construct and dimension of each construct. Reliability scale of the overall service quality was 0.842. This means that it has high reliability.

3.6 Data Analysis Method

Data analysis is a practice in which raw data is ordered and organized so that useful information can be extracted from it. Data analysis consists of examining, categorizing, tabulating, or otherwise recombining the evidence, to address the initial proposition of a study (Yin, 1989, p. 105). An important aspect of data analysis is the search for meaning through direct interpretation of what is observed by them as well as what is experienced and reported by the subjects.

The collected data were entered into SPSS version 20.0 and analyzed by using descriptive statistics. In this study, descriptive analysis was chosen because of its simplicity and clarity to draw inferences. Averages, percentages, frequency and tables were used for the analysis of the collected data. Inferential statistics were used to analyze the existing relationship between the two variables. The researcher was used the customer satisfaction as the dependent variable and the independent variable i.e. service quality dimensions are reliability, responsiveness, assurance, empathy, and tangibles.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

This chapter presents the results and analysis of the data collected from questionnaire and interviews. The remaining part of this chapter is organized as follows. Section 4.1 presents the overview of the chapter, and Section 4.2 presented demographic information about respondents. Section 4.3 presents the measures of service quality. Section 4.4 presents the reliability & validity test including the correlation and regression analysis. The last section presents analysis of open-ended questions.

4.1 Introduction

As it is discussed in the methodology part of this study, data collected by using different techniques were analyzed in this chapter. A total of 250 questionnaires were distributed to customers of Lehulu. Out of the total 250 questionnaires, 235 useable questionnaires were obtained (94% response rate). In addition to questionnaire, the researcher conducted an interview with selected Customer Service Center Heads/Managers and Project Team Leaders for the reason that interviewing all center manager is not applicable. In order to analyze the research results, the Statistical Package for the Social Sciences (SPSS) software is used. SPSS is a computer program used for statistical analysis. Empirical results from quantitative data analysis using statistical package for social science (SPSS) as well as presenting results from descriptive statistics, correlation matrix and regression results was used as the study main statistical tool.

4.1.Demographic Characteristics

Table 4.1. Gender, Educational level, and Type of work

Characteristics	Values	Frequency	Percentage
Gender	Male	101	43.0
	Female	134	57.0
Educational level	Diploma	63	26.8
	First Degree	157	66.8
	Masters and above Degree	15	6.4
Type of work	Government Office	32	13.6
	Private office	113	48.1
	Private Business	37	15.7

	Housewife	12	5.1
	Student	12	5.1
	Retired	13	5.5
	Other	16	6.8

(Source: own survey, 2017)

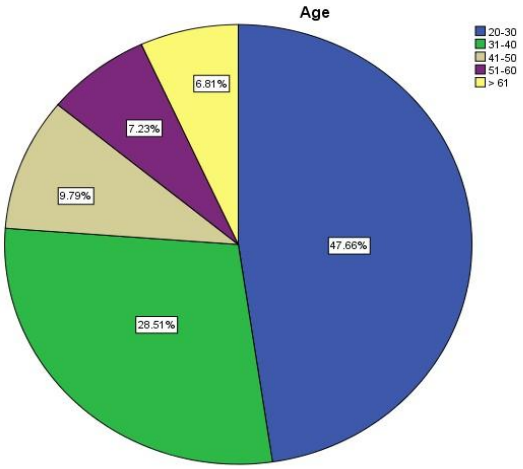
Table 4.1 presents the background information of the respondents of the study. The survey showed that there were more females respondents as compared to males. Female respondents represent 57 percent while the males were 43 percent.

With regard to educational level, diploma holder represents 26.8 percent of the respondents, first degree holders represent 66.8. Master and above degree holder represents 6.4 percent from the total respondents.

Respondents in relation with type of work, 13.6 percent of the respondents worked in the government offices, 48.1 percent of respondents worked in the private office while 15.7 respondents engaged with different private businesses. Respondents of housewife and students are sharing the same percentage which is 5.1 percent each. 5.5 percent and 6.8 percent respondents are under retired and other type of work level.

The possible reason for the results when we considering majority of respondents are female: those people are in charge of administering household consumptions dependently, unemployment rate of female is exceeding male's rate, cultural effect like managing all families need is a women's tasks, most parents are engaged with offices and the servants will handle their bill payment, etc.

Graph 4.1: Age of the respondents

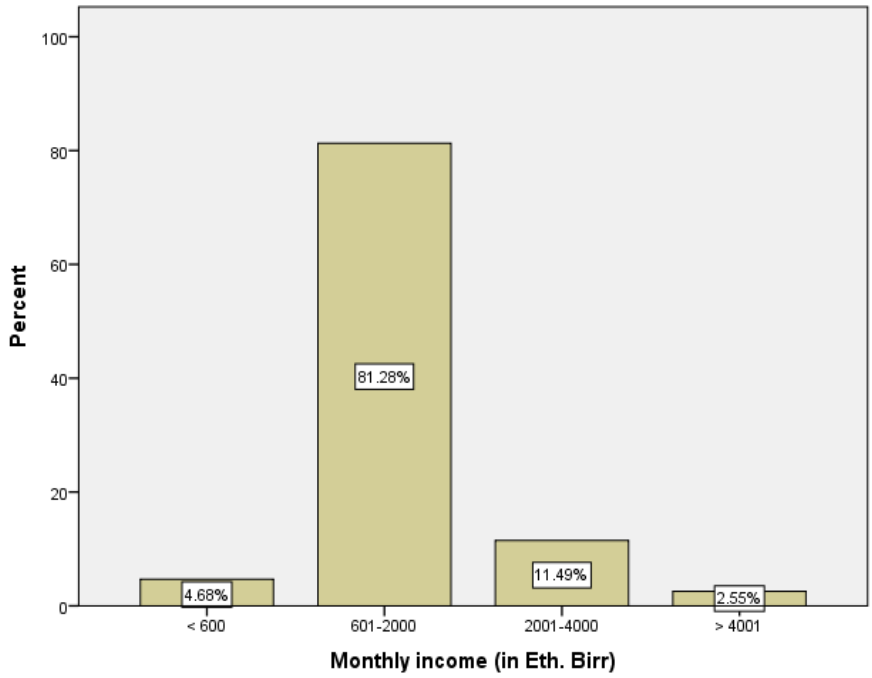


(Source: own survey, 2017)

Graph 4.1 presents the age of the respondents of the study. With regard to age of respondents, 47.66 percent of the respondents are in the range of 20–30 years, 6.81percent of the respondents are in the range of above 61 years, 7.23 percent of the respondents are in a range of 51-60 years, 9.79 percent are in a range of 41-50 years, and 28.51 percent of respondents are under the age of 31-40.

While considering the age of respondents, if there is a young person in the house, parents are ordering them to pay their utility bill payment. Also, the private offices, the newly recruited young people are engaged with this kind of tasks.

Graph 4.2. Monthly income Bar chart



(Source: own survey, 2017)

Graph 4.2 presents the respondents monthly income of the study. In relation to the status of respondent's monthly income, 4.68 percent respondents are under 600-birr income per month while 2.55 percent of respondents are over the range of 4001 birr. 11.49 percent of respondents are in the range of 2001-4000 and majority i.e. 81.28 percent of respondents are the range of 601-2000 birr.

When we consider the monthly income, majority of respondents are in a range of Birr 601-2000 per month. This implies that those having a minimum income can settle their bill liability that higher income category. Because those having a least wage are not able to take any extra debt raised from bill settlement and this costs them more. In other words, having a higher income can take risks.

A response from the survey questionnaire regarding on demographic information showed that the respondents have a different personal information. The result of the descriptive statistics also indicated that most respondents are female, having a first degree, engaged in the private offices, in the range of 20-30 years and with monthly income of 601-2000. This implies that generally females are more patience and more taking careful than males and can judge the responsiveness dimension from the side of providing a prompt service and by willingness to help customers. Also most respondents are a first degree holder and as surely they can judge the assurance dimension as well by determining the Lehulu staff are having a required skill and knowledge perform service. In addition, the survey can identify the visitors of the center is in average of 20-30 years of age.

This indicated that the tangible dimension which related with appearance of physical facilities, equipment, personnel can be judged with this young people. The last demographic which is an income category identified that most respondents are in a range of 600 – 2000 Birr per month. This group of people having income are struggling their life to cover their needs as well paying their regular utility bill payment every month. Those people can judge the responsiveness and empathy dimension by judging the side of understanding the customer or to know the customer & their needs, willingness to help customers. As a result, the information gathered from the collected data from this demographic category can surely represent the population.

4.2.**Service Quality Measures**

Table 4.2: Reliability, Assurance and Responsiveness

Indicators	1(V.D)	2(D)	3(N)	4(S)	5(V.S)	Mean	s.d
RELIABILITY							
Lehulu Center fulfil its promise at the time indicated	24(10.2)	23(9.8)	37(15.7)	78(33.2)	73(31.1)	3.65	1.290
Lehulu Center perform the service exactly at the first time	20(8.5)	26(11.1)	41(17.4)	61(26.0)	87(37.0)	3.72	1.297
Lehulu Center show a keen interest in solving your problems	19(8.1)	23(9.8)	53(22.6)	74(31.5)	66(28.1)	3.62	1.219

Lehulu Center insist on error free Record	18(7.7)	37(15.7)	65(27.7)	58(24.7)	57(24.3)	3.42	1.229
Overall						**3.60**	**1.11**

(Source: own survey, 2017)

Regarding the Reliability dimension 10.2% of respondents strongly dissatisfied on Lehulu Center fulfil its promise at the time, 9.8% dissatisfied on the statement and 15.7% have a neutral idea. 33.2% and 31.1% of respondents satisfied and strongly satisfied with the statement. Lehulu Center perform the service exactly at the first time having a response of 8.5% was strongly dissatisfied, 11.1% is dissatisfied, 17.4% have a neutral idea, 26.0% and 37.0% of respondents are satisfied and strongly satisfied. Among the statement that Lehulu Center show a keen interest in solving your problems, 8.1% respondents are strongly dissatisfied, 9.8% dissatisfied, 22.6% have a neutral idea, 31.5% satisfied and the rest 28.1% are strongly satisfied. The last statement from this dimension which is Lehulu Center insist on error free record, 7.7% of respondents agreed on very dissatisfied, 15.7% are dissatisfied, 27.7% neutral idea, 24.7% satisfied and the rest are very satisfied which is 24.3%.

The respondents satisfied with the idea that Lehulu Center perform the service exactly at the first time and the mean of the survey showed this fact too. From the above table 4.2, the above idea satisfied and common understanding by a value of mean 3.72 and s.d. 1.297. The mean of the collected data is the highest mean from reliability dimension i.e. 3.72. Concerning on the idea that Lehulu Center fulfil its promise at the time has a positive impact on the service of the Lehulu. As a result, the mean is 3.65 and this implies that the Lehulu center fulfill its promise. The result of mean for showing a keen interest in solving the problems by the Lehulu center is 3.62. This shows the majority of respondents are also satisfied on the statement. The mean result of Lehulu Center insist on error free record is 3.42. This entails that most respondents are having a neutral idea on the maintaining an error free record keeping of the Lehulu.

The average mean for reliability dimension is 3.60. This shows that Lehulu is reliable on its service.

Indicators	1(V.D)	2(D)	3(N)	4(S)	5(V.S)	Mean	s.d
ASSURANCE							
Lehulu Center staff behavior instils confidence in me	14(6.0)	31(13.2)	43(18.3)	86(36.6)	61(26.0)	3.63	1.174

I feel safe in my transaction with the Lehulu Center	12(5.1)	30(12.8)	52(22.1)	78(33.2)	63(26.8)	3.64	1.155
Lehulu Center staff are courteous with me	10(4.3)	19(8.1)	120(51.1)	51(21.7)	35(14.9)	3.35	0.973
Lehulu Center staff have the knowledge to answer all my question	11(4.7)	30(12.8)	54(23.0)	72(30.6)	68(28.9)	3.66	1.159
Lehulu Center staff behavior instils confidence in me	18(7.7)	26(11.1)	71(30.2)	68(28.9)	75(31.9)	3.47	1.147
Overall						**3.55**	**0.93**

(Source: own survey, 2017)

According to Assurance dimension, 6.0% of respondents are very dissatisfied with the statement of Lehulu Center staff behavior instills confidence in me while 13.2% are also dissatisfied with this. Respondents of 18.3% have a neutral idea, 36.6% and 26.0% of respondents satisfied and strongly satisfied with these statement. The idea that feeling safe with the transaction in the Lehulu center have a response of 5.1% very dissatisfied, 12.8% dissatisfied, 22.1% neutral, 33.2% satisfied and 26.8% are very satisfied. The data shows for the response of Lehulu Center staff are courteous with me are 4.3% very dissatisfied, 8.1% dissatisfied, 51.1% a neutral idea, 21.7% are satisfied and 14.9% of respondents are very satisfied. Among the statement that Lehulu Center staff have the knowledge to answer all my question, 4.7% respondents are very dissatisfied, 12.8% are dissatisfied, 23.0% have a neutral idea, 30.6% and 28.9% of respondents are satisfied and very satisfied respectively. The last statement that states Lehulu Center staff behavior instils confidence in me, 7.7% of respondents are very dissatisfied, 11.1% are dissatisfied, 30.2% have a neutral idea, 28.9% are satisfied and 31.9% are very satisfied.

Most respondents are satisfied with Lehulu Center staff behavior instils confidence in me and the mean result of respondents regarding on it is 3.63. This implies that employees of the Lehulu center have a good behavior and being a good example. The result of the collected data showed regarding on feeling safe transaction and majority of respondents are satisfied with the safe transaction of the Lehulu service. The mean result of these is 3.64 and this implies that customers feeling a safe transaction lead the Lehulu to have a positive impact on its service. The result of mean for the statement stating Lehulu Center staff are courteous with me is 3.35. Based on this, the outcome of the employees' politeness of the Lehulu is positive. Regarding on the availability of adequate knowledge to answer all question, the mean result which is the highest mean from the assurance dimension shows 3.66. From the respondents can concluded that employees of Lehulu have a

sufficient knowledge to address all customers' queries. Adequate staff knowledge about customer's queries has a positive impact on customer satisfaction.

The average mean for Assurance dimension is 3.55. This shows that Lehulu is ascertain on its service.

Indicators	1(V.D)	2(D)	3(N)	4(S)	5(V.S)	Mean	s.d
RESPONSIVENESS							
Lehulu Center staff tell you exactly the time the service will be performed	21(8.9)	18(7.7)	53(22.6)	68(28.9)	75(31.9)	3.67	1.247
Lehulu Center staff give you prompt services	4(1.7)	24(10.2)	61(26.0)	68(28.9)	78(33.2)	3.82	1.060
Lehulu Center staff always willing to assist you	3(1.3)	15(6.4)	68(28.9)	73(31.1)	76(32.3)	3.87	0.985
Lehulu Center staff are not too busy to respond to my question	7(3.0)	16(6.8)	76(32.3)	72(30.6)	64(27.2)	3.72	1.032
Lehulu Center staff tell you exactly the time the service will be performed	13(5.5)	17(7.2)	131(55.7)	33(14.0)	41(17.4)	3.31	1.021
Overall						**3.67**	**0.87**

(Source: own survey, 2017)

Regarding the Responsiveness dimension 8.9% of respondents strongly dissatisfied on Lehulu Center staff tell you exactly the time the service will be performed, 7.7% dissatisfied on the statement and 22.6% have a neutral idea. 28.9% and 31.9% of respondents satisfied and strongly satisfied with the statement. Lehulu Center staff can give you prompt services having a response of 1.7% was strongly dissatisfied, 10.2% is dissatisfied, 26.0% have a neutral idea, 28.9% and 33.2% of respondents are satisfied and strongly satisfied. Among the statement that Lehulu Center staff always willing to assist you, 8.1% respondents are strongly dissatisfied, 9.8% dissatisfied, 22.6% have a neutral idea, 31.5% satisfied and the rest 28.1% are strongly satisfied. The idea that Lehulu Center staff are not too busy to respond to my question have a response of 3.0% very dissatisfied, 6.8% dissatisfied, 32.3% neutral, 30.6% satisfied and 27.2% are very satisfied. The last statement from this dimension which is Lehulu Center staff tell you exactly the time the service will be performed, 5.5% of respondents agreed on very dissatisfied, 7.2% are dissatisfied, 55.7% neutral idea, 14.0% satisfied and the rest are very satisfied which is 17.4%.

According to the respondent's opinion regarding on the staffs informing the time that the service performed which is having a mean value of 3.67 indicated that most respondents agreed with the staffs informing the customers exactly the service time. As per the response of respondents, the mean value about Lehulu staffs' willingness of assisting customers which is a highest mean in the responsiveness dimension is 3.87. This implies that the majority of respondents satisfied with willingness of staffs for customer needs. From this can concluded that employee's willingness has a positive impact on customer satisfaction. In regard to the mean results of the respondents regarding staffs busy to respond customers request indicating that most of the respondents satisfied with the staff never too busy to respond to customers' questions. The mean result of these idea is 3.72. This implies that staffs of Lehulu never too busy to respond to customer's questions and have a positive impact on the customer satisfaction. The last statement about Lehulu Center staff tell you exactly the time the service will be performed having a mean value of 3.31. Also respondents are satisfied with these ideas.

Table 4.3: Empathy and Tangibility

Indicators	1(V.D)	2(D)	3(N)	4(S)	5(V.S)	Mean	s.d
EMPATHY							
Lehulu Center give me individual attention	11(4.7)	27(11.5)	59(25.1)	64(27.2)	74(31.5)	3.69	1.166
Lehulu Center operating hours convenient to me	3(1.3)	23(9.8)	55(23.4)	62(26.4)	92(39.1)	3.92	1.063
The Lehulu Center has my interest at heart	4(1.7)	27(11.5)	69(29.4)	72(30.6)	63(26.8)	3.69	1.042
Lehulu Center staff understand my specific needs	6(2.6)	23(9.8)	76(32.3)	78(33.2)	52(22.1)	3.63	1.015
Overall						**3.73**	**0.86**

(Source: own survey, 2017)

According to Empathy dimension, 4.7% of respondents are very dissatisfied with the statement of Lehulu Center give me individual attention while 11.5% are also dissatisfied with this. Respondents of 25.1% have a neutral idea, 27.2% and 31.5% of respondents satisfied and strongly satisfied with these statement. The data shows for the response of The Lehulu Center operating hours convenient to me are 1.3% very dissatisfied, 9.8% dissatisfied, 23.4% a neutral idea, 26.4% are satisfied and 39.1% of respondents are very satisfied. Among the statement that The Lehulu Center has my interest at heart, 1.7% respondents are very dissatisfied, 11.5% are dissatisfied,

29.4% have a neutral idea, and 30.6% and 26.8% of respondents are satisfied and very satisfied respectively. The last statement that states Lehulu Center staff understand my specific needs, 2.6%of respondents are very dissatisfied, 9.8% are dissatisfied, 32.3% have a neutral idea, 33.2% are satisfied and 22.1% are very satisfied.

According to the respondent's response on individual attention that can get from the Lehulu have a mean of 3.69. From the response concluded that Lehulu staff can give an individual attention to customer in need and this action have a positive impact on customer satisfaction. As per the result of response, the mean value for the collected data regarding the operating hours is having the highest mean from empathy dimension which is 3.92. This indicates that the performed service of Lehulu is having a convenient working hour to customers and had a great impact on customer satisfaction. The mean result of the respondents in relation to staffs giving customers best interest at heart shows 3.69. This shows that most respondents are satisfied with this idea and resulted positive influence on customer satisfaction. The last statement from empathy dimension stated that understanding of specific need by staffs have a mean value of 3.63. This explains that the staffs are able to recognize the specific need of the customers precisely. This have also a great impact on customer satisfactions.

Indicators	1(V.D)	2(D)	3(N)	4(S)	5(V.S)	Mean	s.d
TANGIBLES							
The Lehulu Center employees has a neat & professional appearance	6(2.6)	5(2.1)	46(19.6)	67(28.5)	111(47.2)	4.16	0.981
Material associated with the service like pamphlets, statements are visually appealing at the Lehulu Center	6(2.6)	13(5.5)	50(21.3)	76(32.3)	90(38.3)	3.98	1.025
Lehulu Center physical facilities visually nice	12(5.1)	15(6.4)	52(22.1)	71(30.2)	85(36.2)	3.86	1.133
Lehulu Center has modern equipment & tools	5(2.1)	13(5.5)	49(20.9)	71(30.2)	97(41.3)	4.03	1.019
Overall						**4.01**	**0.82**

(Source: own survey, 2017)

Regarding the Tangibility dimension 2.6% of respondents strongly dissatisfied on The Lehulu Center employees has a neat & professional appearance, 2.1% dissatisfied on the statement and 19.6% have a neutral idea. 28.5% and 47.2% of respondents satisfied and strongly satisfied with the statement. Material associated with the service like pamphlets, statements are visually

appealing at the Lehulu Center having a response of 2.6% was strongly dissatisfied, 5.5% is dissatisfied, 21.3% have a neutral idea, and 32.3% and 38.3% of respondents are satisfied and strongly satisfied. Among the statement that Lehulu Center physical facilities visually nice, 5.1% respondents are strongly dissatisfied, 6.4% dissatisfied, 22.1% have a neutral idea, 30.2% satisfied and the rest 36.2% are strongly satisfied. The idea that Lehulu Center has modern equipment & tools have a response of 2.1% very dissatisfied, 5.5% dissatisfied, 20.9% neutral, 30.2% satisfied and 41.3% are very satisfied.

The respondents strongly satisfied with the appearance of employees. As per the response, the Lehulu staffs have a clean and well-dressed dressing. The mean of the result showed that 4.16 which is a highest mean in the tangibility dimension. Their dressing code impresses customers and have also an impact positively. The mean result of the statement of Material associated with the service like pamphlets, statements are visually appealing at the Lehulu Center is 3.98. This shows that the Lehulu center had an adequate awareness creation program by preparing and distributing pamphlets, flyers, etc. And also the mean value for the statement stated Lehulu Center physical facilities visually nice and Lehulu Center has modern equipment & tools is 3.86 and 4.03 respectively. This implies that the KFT had exerted more effort by facilitating physical equipment and materials for the Lehulu center. As a result, it brings a greater customer satisfaction.

Table 4.4: Customer satisfaction table

CUSTOMER SATISFACTION	1(V.D)	2(D)	3(N)	4(S)	5(V.S)	Mean	s.d
I am satisfied with the Lehulu Center complete range of services	5(2.1)	21(8.9)	38(16.2)	97(41.3)	74(31.5)	3.91	1.011
I am satisfied with the performance of the employees of this Lehulu	1(0.4)	14(6.0)	41(17.4)	94(40.0)	85(36.2)	4.06	0.902
I am satisfied of being a client of this Lehulu Center.	3(1.3)	10(4.3)	43(18.3)	95(40.4)	84(35.7)	4.05	0.909
I am satisfied with the Lehulu Center employees' professional competence	5(2.1)	5(2.1)	52(22.1)	102(43.4)	71(30.2)	3.97	0.896
I am satisfied with the quick service of this Lehulu Center	1(0.4)	11(4.7)	34(14.5)	98(41.7)	91(38.7)	4.14	0.861
I am satisfied with the respectful behavior of	4(1.7)	9(3.8)	44(18.7)	85(36.2)	93(39.6)	4.08	0.942
Overall						**4.03**	**0.77**

(Source: own survey, 2017)

When the respondents asked about the overall customer satisfaction of Lehulu center, 41.3% were satisfied with the complete range service of Lehulu, 40.0% were satisfied with the performance of the employees of Lehulu, 40.4% were satisfied with being a client of Lehulu, 43.4% were satisfied with the Lehulu's employee professional competence, 41.7% were satisfied with the quick service of Lehulu, 36.2% were satisfied with the respectful behavior of Lehulu employees.

The average mean for customer satisfaction is 4.03. This implies that majority of customers are satisfied with the Lehulu service.

According to customer satisfaction in general, the idea satisfied and common understanding about I am satisfied with the Lehulu Center complete range of services (Mean= 3.91, s.d = 1.011), and also the idea satisfied and common understanding about I am satisfied with the performance of the employees of this Lehulu Center indicated that (Mean = 4.06, s.d = 0.902). In addition, I am satisfied of being a client of this Lehulu Center idea and common understanding (Mean = 4.05 and s.d. = 0.909. The idea satisfied and common understanding about I am satisfied with the Lehulu Center employees' professional competence (Mean = 3.97, s.d. = 0.896). The idea satisfied and common understanding about I am satisfied with the quick service of this Lehulu Center (Mean = 4.14, s.d. = 0.861). The last idea satisfied and common understanding is about I am satisfied with the respectful behavior of Lehulu Center employees (Mean = 4.08, s.d. = 0.942).

From the above table can concluded that from the overall customer satisfaction, most customers are very satisfied with the quick service of this Lehulu Center by having a highest mean value which is 4.14. And customers are less satisfied with I am satisfied with the Lehulu Center complete range of services at a least mean value of 3.91.

4.3.**Reliability and Validity Test**

As stated by "Hair et al., (2007) reliability indicates the extents to which a variables or set of variables is consistent in what it is intended to measure" (Cited by Siddiqi; 2011:20). Reliability analysis used to measure the consistency of a questionnaire. There are different methods of reliability test, for this study Cronbach's alpha is considered to be suitable. Cronbach's alpha is the most common measure of reliability. For this study the Alpha coefficient for the overall scale calculated as a reliability indicator is 0. 949. All the alpha coefficients for the scales were presented on the following table. As described by Andy (2006) the values of Cronbach's alpha more than

0.7 is good. The alpha values in this study are far from 0.7 and which are; therefore, it had very good reliability for the questionnaires.

Table 4.5. Reliability test

Indicators	Number of items	Cronbach Alpha
RELIABILITY	4	0.901
ASSURANCE	5	0.887
RESPONSIVENESS	5	0.874
EMPATHY	4	0.815
TANGIBLES	4	0.801
CUSTOMER SATISFACTION	6	0.912
Overall	28	0.949

(Source: own survey, 2017)

4.4.Correlation analysis

Table 4.6. Correlation analysis result

Correlations

		RELIABILITY	ASSURANCE	RESPONSIVENESS	EMPATHY	TANGIBLES
CUSTOMER SATISFACTION	Pearson Correlation	.580**	.612**	.629**	.699**	.387**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	235	235	235	235	235

(Source: own survey, 2017)

4.5. Regression analysis

4.2.3. Tests for the Multiple Linear Regression Model Assumptions

In order to make the data ready for analysis and to get reliable results from the research, the model stated previously was tested for five multiple linear regression model assumptions. Among them the major ones are: test for heteroscedasticity, autocorrelation, multicollinearity, normality and constant variable. Accordingly, the following sub-section presents the tests made.

Assumption one: the errors have zero mean (E (ε) = 0) or constant variable

The first assumption states that the average value of the errors should be zero. According to (Brooks 2008) if the regression equation contains a constant term, this presumption will never be breached. Therefore, since from the regression result table the constant term (i.e. β0) was included in the regression equation; this assumption holds good for the model.

Assumption two: homoscedasticity (variance of the errors is constant (VVVV$(\mu\mu_{tt}) = \sigma\sigma^{22} < \infty$)

Heteroskedasticity is a systematic pattern in the errors where the variances of the errors are not constant. When the variance of the residuals is constant it is referred as homoscedasticity, which is desirable. To test for the absence of heteroscedasticity white test was used in this study. In this test, if the p-value is very small, less than 0.05, it is an indicator for the presence of heteroscedasticity (Gujarati 2004).

But from Table 4.7 presents three different types of tests for heteroscedasticity. Since the p-values of all the three tests are considerably in excess of 0.05 it's a clear indicator that there is no evidence for the presence of heteroscedasticity. Hence, the model passes the second test.

Table 4.7: Heteroscedasticity Test: White test

Heteroskedasticity Test: White

F-statistic	2.748108	Prob. F(20,214)	0.4322
Obs*R-squared	48.02202	Prob. Chi-Square(20)	0.2344
Scaled explained SS	64.91328	Prob. Chi-Square(20)	04532.

Assumption three: covariance between the error terms over time is zero (cov (ui, uj) = 0)

This assumption states that covariance between the error terms over time or cross-sectional, for that type of data is zero. That is, the errors should be uncorrelated with one another. If the errors are not uncorrelated with one another it is an indicator for the presence of Auto correlation or serial correlation (Brooks 2008).

According to Brooks (2008), presence/absence of autocorrelation is by using the Breusch–Godfrey test (shown in table 4.8). The result of the statistic labeled "obs*R-squared", which is the LM test

statistic for the null hypothesis of no serial correlation shows a p-value of 0.0607 (which is far greater than 0.05) which strongly indicates the absence of autocorrelation.

Table 4.8: Breusch-Godfrey Serial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test:

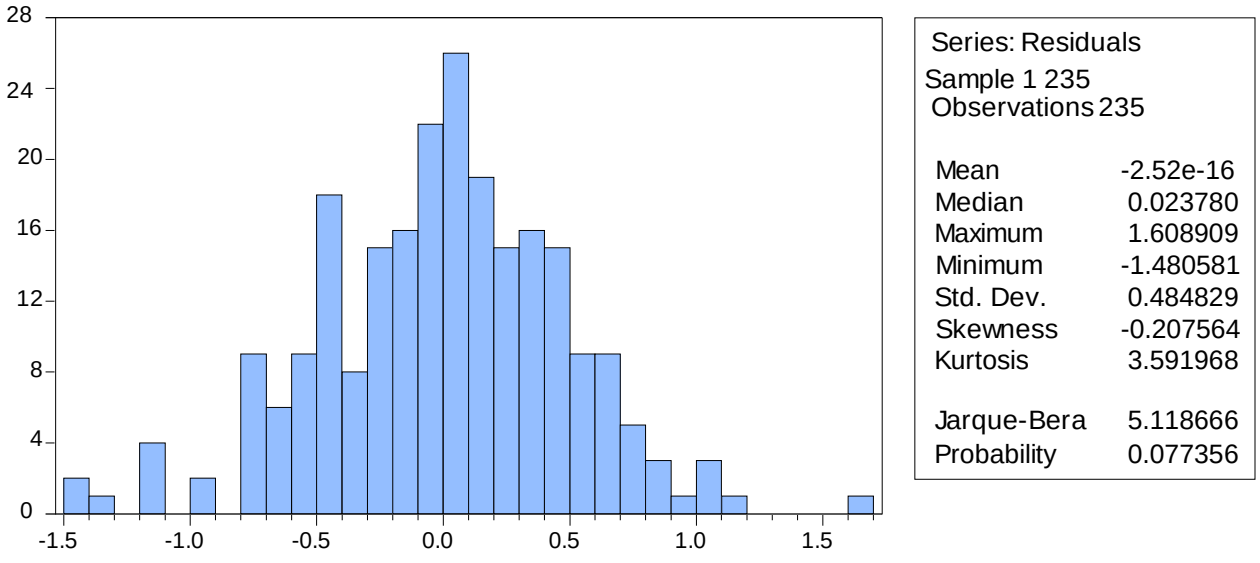
F-statistic	0.143116	Prob. F(2,227)	0.8667
Obs*R-squared	0.295946	Prob. Chi-Square(2)	0.8625

Assumption four: Normality (errors are normally distributed $\mu\mu_{tt\sim} N(\mathbf{00}, \ \sigma\sigma^{22})$

A normal distribution is not skewed and is defined to have a coefficient of kurtosis 3. Jarque-Bera formalizes this by testing the residuals for normality and testing whether the coefficient of skeweness and kurtosis are zero and three respectively. Normality assumption of the regression model can be tested with the Jarque- Bera measure. If the probability of Jarque-Bera value is greater than 0.05, it's an indicator for the presence of normality (Brooks 2008).

The normality tests for this study as shown in Figure 4.1 the kurtosis is close to 3, and the Jarque-Bera statistic has a p-value of 0.0773 which is well over 0.05 implying that the data were consistent with a normal distribution assumption.

Figure 4.1 Normality Test result



Assumption five: Multicollinearity Test

According to (Churchill and Iacobucci 2005), multicollinearity is concerned with the relationship which exists between explanatory variables. When there exists the problem of multicollinearity, the amount of information about the effect of explanatory variables on dependent variables decreases and as a result, many of the explanatory variables could be judged as not related to the dependent variables when in fact they are. How much correlation causes multicollinearity, however, is not still clearly defined. Many authors have suggested different level of correlation to judge the presence of multicollinearity. While (Hair, et al. 2006) argued that correlation coefficient below 0.9 may not cause serious multicollinearity problem. (Malhotra 2007) stated that multicollinearity problem exists when the correlation coefficient among variables is greater than 0.75. This indicates that there is no consistent agreement on the level of correlation that causes multicollinearity.

Table 4.9: Correlation matrix between explanatory variables

	RES	REL	ASSU	EM	TA
RES	1.000000	0.691913	0.732947	0.692371	0.229619
REL	0.691913	1.000000	0.741363	0.632790	0.124384
ASSU	0.732947	0.741363	1.000000	0.659720	0.099545
EM	0.692371	0.632790	0.659720	1.000000	0.347194
TA	0.229619	0.124384	0.099545	0.347194	1.000000

Therefore, in this study correlation matrix for five of the independent variables is shown above in Table 4.9. The result of the estimated correlation matrix shows that the highest correlation of 0.741363 which is between assurance and reliability. Since there is no correlation above 0.75 and 1.9 . According to (Malhotra 2007) and (Hair, et al. 2006) respectively, it can be concluded that there is no problem of multicollinearity.

Regression Results

Table 4.10. Regression results for Service Quality

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.877	.200		4.378	.000
	RELIABILITY	.071	.048	.102	1.492	.137
	ASSURANCE	.158	.061	.192	2.597	.010
	RESPONSIVENESS	.114	.063	.130	1.823	.070
	EMPATHY	.309	.060	.346	5.170	.000
	TANGIBLES	.191	.044	.205	4.392	.000

a. Dependent Variable: CUSTOMER SATISFACTION

The result of this study indicates that reliability has a positive and insignificant effect on customer satisfaction. This finding is not supported by Tizazu et al., (2012). He found that reliability has a positive and significant effect on customer satisfaction. This finding is also not supported by Mohamed and Alhamadani (2011), found that reliability has a positive and significant effect on customer satisfaction. Al-Hawary et al., (2011) also not supported this study. According to him reliability has positive and significant relationship with customer satisfaction.

The finding of this study also indicates that assurance has a positive and significant effect on customer satisfaction. This finding is supported by Malik et al., (2011) reported that assurance has a positive and significant effect on customer satisfaction. This result also supported by Munusamy et al., (2010), found that assurance has a significant and positive effect on customer satisfaction.

The finding of this study also indicates that responsiveness has a positive and insignificant effect on customer satisfaction. This finding is not supported by Al-Hawary et al., (2011) reported that responsiveness has a positive and significant effect on customer satisfaction. Munusamy et al.,(2010) also has different finding. According to him responsiveness has positive and significant effect on customer satisfaction.

The finding of this study further indicates that empathy has a positive and significant effect on customer satisfaction. This finding is supported by Mohammad and Alhamadani (2011), reported that empathy has a positive and significant effect on customer satisfaction. On the contrary Munusamy et al., (2010) found that empathy has a negative effect on customer satisfaction.

The finding of this study indicates that tangibility has a positive and significant effect on customer satisfaction. This finding is different with Malik et al., (2011). He found that tangibility has no effect on customer satisfaction. This result is different with the study by Mohammad and Alhamadani (2011), found that tangibles has a positive and insignificant effect on customer satisfaction. This finding is supported with the study by Al-Hawary et al., (2011) reported that tangibles have a positive and significant effect on customer satisfaction. Munusamy et al., (2010) also has supported these findings. According to him tangibles has positive and significant effect on customer satisfaction.

Regression Results Model Summary

R-Square =0.762 , Adjusted R-Square= 0.571, F(Stat) = 63.369, p-value for F(Stat) = 0.000

From regression model summary, it can be seen that the multiple R (correlation) value of 76.2% (0.762) indicates positive relationship between the dependent and independent variable and R Square value for the model showed that 57.1% of the dependent variable in the model can be predicted by the independent variables.

Table 4.10 shows the Beta coefficients that present the contributions or positive or negative relationship of each variable to the model. The t and p values showed the influence of the independent variable on the dependent variable. From this it is clear that the customer satisfaction and service quality dimensions (empathy and tangibles) had the highest affecting on customer satisfaction comparing with reliability, assurance and responsiveness. According to coefficient results all service quality dimensions (reliability, assurance, responsiveness, empathy and tangibles) are positively to dependent variable and only assurance is significant by having a p-value of 0.010, however reliability and responsiveness, are not significant as individually because they have a sig. value of greater than 5% (0.137, 0.070). Empathy and tangibles are highly

significant because they have a sig. value of 0.000 for each. The variable with the level of significance (sig) value less than 5% could make a significance unique contribution to the predicted value of the dependent variable, beyond this level of sig. the variable is not making a significance contribution for the prediction of the dependent variable (Pallant, 2007; Somekh and Lewinn, 2005).

From the above table 4.10: the most significant variables for customer satisfaction are tangibility and empathy, this indicate that as empathy and tangibility increase with increasing the customer satisfaction, in addition to this assurance had a significant contribution for customer satisfaction, also indicates as the empathy of employee increases with increasing the satisfaction level of employees. However, from this study reliability and responsiveness had not a significant contribution for the customer satisfactions because they have a sig. value less than 5% which is 0.137 and 0.070 respectively.

Abebe (2013), from the findings of his study, the researcher found out that not all of the service quality dimensions have a positive impact on customer satisfaction. Out of the five service quality dimensions four dimension like reliability, assurance and empathy have a positive and significant impact on customer satisfaction. On the other hand, responsiveness and tangibility has a positive and highly significant influence on customer satisfaction. The findings of his study also indicated that assurance is the most important factor to have positive and significant effect on customer satisfaction, followed by reliability and empathy.

The fitted regression model from the table 4.10 is:

CUS =0.877+ 0.071REL + 0.158 ASSU + 0.114RES + 0.309EMPA + 0.191TAN

Where: **CUS**=Customer Satisfaction, **REL**=Reliability, **ASSU**=Assurance, **RES**=Responsiveness, **EMPA**=Empathy and **TAN**=Tangibles

The beta coefficients tell us about the relationship between the outcome and each predictor. If the value is positive, we can tell that there is a positive relationship between the predictor and the outcome, whereas a negative coefficient represents a negative relationship between predictors and outcome. From these data, reliability, assurance, responsiveness, empathy and tangibility have a

positive beta value thus indicating a positive relationship. Therefore, there is a positive relationship between the predictor (reliability, assurance, responsiveness, empathy and tangibility) and an outcome (customer satisfaction) since the value of beta coefficient is positive.

Based on the above regression analysis of the above model, the empathy has the highest significant positive effect on customer satisfaction (β = .309, P =.000). The second highest significant positive effect on customer satisfaction is tangibility (β = .191, P =.000). Assurance had a positive beta value (β = .158, P =.010) but it does not have a significant effect on customer satisfaction because P=0.010 which is P<0.05. Responsiveness also had a positive beta value (β = .114, P =.070) and it have a significant effect on customer satisfaction because P>0.05. Reliability have also a positive beta value and have a significant effect on customer satisfaction i.e P>0.05 (β = .071, P =.137).

In this study there is significant correlation where found between the independent variables (reliability, assurance, responsiveness, empathy and tangibles) with the dependent variable (customer satisfaction).

Lastly, empathy has a dominant influence over than reliability, assurance, responsiveness and tangibles. It contributes 30.9% while reliability 7.1%, assurance 15.8, responsiveness 11.4% and tangibles 19.1% for customer satisfaction.

Analysis of Interview Questions

According to respondent's opinion regarding on the challenges of UBS service from the company perspective is that the system encounter problem, data clearance, multiple payment, and adaptation of outdated technology are the major problem facing the company currently. And also from employee perspectives, the challenges are the employees needed an additional training and they need equal task distribution. From customer perspectives, unavailability of sufficient change fund and awareness creation are the major problems.

The review of respondents indicated that the overall service quality of the company can be affecting by non-adaptation of latest technology that the company facing a challenges of multiple payment, data transfer & connection problems are the reasons. And also delaying of sending data on a timely basis can create reduction of company's' revenue. Currently, there is high staff turnover and the company expend more cost on training and this cost is too much.

According to the result of the interview, to improve the customer service quality and to manage the problems, the company handling the problems by creating tickets for each queries.

The result also indicating that after all the role of technology vender is good. But it has a positive effect on customer that they can get a service at anywhere with simple, convenient and fast way by single window. But also this technology had a negative effect on customers like double payment, invalid customer ID, synchronization problem, connection problem

The company evaluate and monitor the customer satisfaction by interviewing and distributed different questionnaire to different customers. The customer complaints can be handled by opening tickets based on their queries. If the problem is internal like an IT problem, the IT personnel can give a solution. But, if it is external with the utility companies, by discussing with utility personnel's and can solve the problem.

The managers also added as per the interviews, to improve the service of Lehulu, it is better to increase service lines at regional level. It is better to implement the service by mobile based application. Adaptation of latest technology can decrease/minimize multiple payment challenges. As this utility payment system is first in Africa and as it is financial technology innovator, the company expects to exert more effort to solve the regular issue with multiple payment, data clearance and etc. problems.

According to the interview result of customer service center employees, while on providing a service to Lehulu customers, the facing problem are multiple payment, data clearance, change fund problems are the major ones. The suggestion to improve the quality of the services are sending alert message to customer on a timely basis and continuous meeting for better understanding.

Providing of a generator for each center, customer get service within short period of time, introducing of online service delivery system are additional idea that they gave for the improvements.

The recommendation for future improvements are providing of a generator for each center, customer get service within short period of time by maintaining the queue machine, introducing of online service delivery system, increasing service lines at regional level, introducing the bill notification payment by SMS and implementation of mobile based payment service which is on the pilot stage are the major recommendations.

CHAPTER FIVE

FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 SUMMARY OF FINDINGS

The study was planned at investigating the impact of service quality on customer satisfaction in the Kifiya Financial Technology P.L.C.

In this part of the Thesis, the summary of the findings of the study is derived from the analysis of primary data. The data source is mainly emphasized on the primary data that had been collected from different respondents through questionnaire and interviews. Based on the analysis of the service delivery practice and customer satisfaction, the following findings are identified.

The results of background information of respondents indicated that majority of the total respondents (57 percent) are female, (66.8 percent) first degree educational level, (48.1 percent) engaged in private office type of works, (47.66 percent) aged in the range of 20-30 years, and

(81.28 percent) of the respondents are in a range of birr 601-2000 monthly income.

The result of the descriptive statistical analysis indicated that, most customers are agreed with: from reliability indicator by Lehulu Center perform the service exactly at the first time, from assurance indicator by Lehulu Center staff have the knowledge to answer all my question, from responsive indicator by Lehulu Center staff always willing to assist you, from empathy indicator by Lehulu Center operating hours convenient to me, and from tangibility indicator by Lehulu Center employees has a neat & professional appearance. Furthermore, customers were less satisfied with: from reliability dimension by Lehulu Center insist on error free record, from assurance dimension by Lehulu Center staff are courteous with me, from responsiveness dimension by Lehulu Center staff tell you exactly the time the service will be performed, from empathy dimension by Lehulu Center staff understand my specific needs, and from tangible dimension by Lehulu Center physical facilities visually nice. In addition, the result of descriptive statistics also indicated that customers are satisfied with the quick service of Lehulu center.

The result of this study indicates that reliability has a positive and insignificant effect on customer satisfaction. This finding is not supported by Tizazu et al., (2012). He found that reliability has a positive and significant effect on customer satisfaction. This finding is also not supported by Mohamed and Alhamadani (2011), found that reliability has a positive and significant effect on customer satisfaction. Al-Hawary et al., (2011) also not supported this study. According to him reliability has positive and significant relationship with customer satisfaction.

The finding of this study also indicates that assurance has a positive and significant effect on customer satisfaction. This finding is supported by Malik et al., (2011) reported that assurance has a positive and significant effect on customer satisfaction. This result also supported by Munusamy et al., (2010), found that assurance has a significant and positive effect on customer satisfaction.

The finding of this study also indicates that responsiveness has a positive and insignificant effect on customer satisfaction. This finding is not supported by Al-Hawary et al., (2011) reported that responsiveness has a positive and significant effect on customer satisfaction. Munusamy et al.,(2010) also has different finding. According to him responsiveness has positive and significant effect on customer satisfaction.

The finding of this study further indicates that empathy has a positive and significant effect on customer satisfaction. This finding is supported by Mohammad and Alhamadani (2011), reported that empathy has a positive and significant effect on customer satisfaction. On the contrary Munusamy et al., (2010) found that empathy has a negative effect on customer satisfaction.

The finding of this study indicates that tangibility has a positive and significant effect on customer satisfaction. This finding is different with Malik et al., (2011). He found that tangibility has no effect on customer satisfaction. This result is different with the study by Mohammad and Alhamadani (2011), found that tangibles has a positive and insignificant effect on customer satisfaction. This finding is supported with the study by Al-Hawary et al., (2011) reported that tangibles have a positive and significant effect on customer satisfaction. Munusamy et al., (2010) also has supported these findings. According to him

tangibles has positive and significant effect on customer satisfaction.

In overall, the results revealed that all independent variables (service quality dimension) accounted for 76.2 percent of the variance in customer satisfaction (R2 = 0.762). Thus, 76.2 percent of the variation in customer satisfaction can be explained by the five service quality dimensions and other unexplored variables may explain the variation in customer satisfaction which accounts for about 23.8 percent.

5.2 **CONCLUSION**

The study was conducted to examine the service quality on customer satisfaction at Kifiya Financial Technology P.L.C. at Addis and regional offices. The finding of the study indicates that customers of Lehulu were satisfied by the five service quality dimensions (tangibility, reliability, responsiveness, assurance and empathy).

The finding of the study also indicated that, customers were most satisfied with the tangible dimensions of service quality. However, customers were less satisfied with responsive dimensions of service quality. The correlation result shows that all service quality dimensions (assurance, empathy and tangibles) have a positive and significant relationship but reliability and responsiveness have a positive and insignificant relationship with customer satisfaction.

The five service quality dimensions including reliability, assurance, responsiveness, empathy and tangibility have a positive and significant impact on customer satisfaction. The findings of this study indicated that empathy is the most important factor to have a positive and significant impact on customer satisfaction. In addition to this, except reliability and tangibility, the three service quality dimensions significantly explain the variations in customer satisfaction.

5.3RECOMMENDATION

Based on the above conclusions, the researcher recommends the following points:

- Assurance dimension was one of the most important factors influencing customer satisfaction. But customers of the Lehulu are less satisfied with this dimension. The result

of the collected data showed that it had a least mean value from all dimension i.e. 3.55. Therefore, the company should improve the behavior of the staffs, building trust for the transaction among their customers, showing a well-manner into their customers' and developing an adequate knowledge to solve a problem,

- KFT should provide a solution to solve regular issues like a multiple payment, data clearance and networks challenges,
- KFT introduced latest technology like mobile based application for paying the bill by using mobile apparatus through agents. Therefore, the company should be increasing awareness programs through different advertising mechanisms.
- To improve the service of Lehulu, the management should diversify the utility bill payment of water, television and traffic penalty settlements at regional level ASAP.

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Appendix A: Questionnaires and Interviews.

PART I. Questionnaire

Dear Sir/Madam

My name is Bilen Kelemework, MBA student in department of Accounting and Finance at St. Mary's University. The aim of this questionnaire is to studying the contribution of unified billing system in quality service delivering. The information you provide in response to the items in the questionnaire will be used as part of the data needed for a study of service quality, mainly focused on unified billing system. The results of the study are anticipated to supply to the understanding of the basic challenges and benefits of adopting new technology in delivering of service to customers in Kifiya Financial Technology PLC. I would like to assure you that the information you provide will be used only for the purpose of achieving academic award. Your involvement is regarded as a great input to the quality of the research results. Hence, I believe that you will enlarge your assistance by participating in the study. Your honest and thoughtful response is invaluable.

Note:

1. No need of writing your name.
2. Where alternative answers are given, encircle your choice and put X mark where Necessary.
3. Please give more attention and return the completed questionnaire. If you need further explanation you can contact me (Telephone No. 0911183295) and discuss the matter.

Thank you for your participation and timely response in advance.

Best regards,
Bilen Kelemework
MBA student at St. Mary's University
Department of Accounting and Finance
March, 2017

General Instruction

This questionnaire contains two sections and 6 pages that will be expected to take approximately 15 to 20 minutes to complete. Please provide your responses to the questions based on the instructions under each section. If you have comments or if you want to provide further explanations, please use the space provided at the end of the questionnaire.

Section I: Demographic profile of respondents

Please indicate the following by ticking (√) on the spaces in front of the response options:

1. Gender: Male ☐ Female ☐

2. Age: 20-30 ☐ 31-40 ☐ 41-50 ☐ 51-60 ☐ > 61 ☐

3. Educational level: Diploma ☐ First degree ☐ Master's degree ☐

4. Type of work: Government Office ☐ Private Office ☐ Private Business ☐
   House wife ☐ Student ☐ Retired ☐ Other _____

5. Monthly income (in Eth. Birr): < 600 ☐ 601-2000 ☐ 2001-4000 ☐ > 4001 ☐

6. Frequency of visiting the Lehulu center: Weekly ☐ Monthly ☐ More ☐

Section II: Questionnaires related with service quality.

Instruction: Below are lists of statements pertaining with the service provided by the Lehulu Center. Please indicate whether you agree or disagree with each statement by ticking (√) on the spaces that specify your choice from the options that range from ‟‟ Very dissatisfied ‟ to „‟ Very satisfied ‟ .Each choice were identified by numbers ranged from 1 to 5.

Note: 1=very dissatisfied, 2=dissatisfied, 3=neutral, 4=satisfied, 5=very satisfied

Item	Scale				
	very dissatisfied				very satisfied
	1	2	3	4	5
RELIABILITY					
Lehulu Center fulfil its promise at the time indicated Lehulu Center perform the service exactly at the first time					
Lehulu Center show a keen interest in solving your problems					
Lehulu Center insist on error free record					

ASSURANCE					
Lehulu Center staff behavior instils confidence in me					
I feel safe in my transaction with the Lehulu Center					
Lehulu Center staff are courteous with me					
Lehulu Center staff have the knowledge to answer all my question					
Lehulu Center staff behavior instils confidence in me					
RESPONSIVENESS					
Lehulu Center staff tell you exactly the time the service will be performed					
Lehulu Center staff give you prompt services					
Lehulu Center staff always willing to assist you					
Lehulu Center staff are not too busy to respond to my question					
Lehulu Center staff tell you exactly the time the service will be performed					
EMPATHY					
Lehulu Center give me individual attention					
Lehulu Center operating hours convenient to me					
The Lehulu Center has my interest at heart					
Lehulu Center staff understand my specific needs					
TANGIBLES					
The Lehulu Center employees has a neat & professional appearance					
Material associated with the service like pamphlets, statements are visually appealing at the Lehulu Center					
Lehulu Center physical facilities visually nice					
Lehulu Center has modern equipment & tools					
CUSTOMER SATISFACTION QUESTIONNAIRE (CSQ)					
I am satisfied with the Lehulu Center complete range of services.					
I am satisfied with the performance of the employees of this Lehulu Center.					
I am satisfied of being a client of this Lehulu Center.					
I am satisfied with the Lehulu Center employees' professional competence					
I am satisfied with the quick service of this Lehulu Center					
I am satisfied with the respectful behavior of Lehulu Center employees.					

What you recommend to the Lehulu Center for further improvements?

.....

.....

PART II. Interview

Section I. Interview Questions to Customer Service Center Heads/Managers, Project Team Leaders and employees

1. In your opinion, what are the challenges of prepayment service from the company, employees? (Sales people) and customers' perspective? (Mangers and Project team)

2. According to you view, how has it all been affecting the overall service quality of the company and some other implications, if any, say cost/revenue of the KFT? (Mangers and Project team)

3. What measures, if any, have been taken to manage these problems and thereby improve the customer service quality? If nothing has been done, why? (Mangers and Project team)

4. What is the role of the technology vendor (Supplier Company) in affecting the customer service (positive/negative)? (Mangers and Project team)

5. Do you evaluate and monitor the customers' satisfaction? If so, how and on what basis (Standards)? (Mangers and Project team)

6. Can you briefly describe how customer complaints are handled? (Mangers and Project team)

7. Anything else that you would like to add in relation to Lehulu service? (Mangers and Project team)

Section II. Interview Questions to Customer Service Center Employees

8. What problems/challenges do you see while working on and providing customer service to Lehulu customers? (Employees)

9. What/how do you suggest to anyone concerned in order to improve the quality of customer service in the center?(Employees)

10. Anything you would like to add as an end-user of the system? (Employees)

11. What you recommend to the Lehulu Center for further improvements? (Employees)

Appendix B

Correlation matrix

	RES	REL	ASSU	EM	TA
RES	1.000000	0.691913	0.732947	0.692371	0.229619
REL	0.691913	1.000000	0.741363	0.632790	0.124384
ASSU	0.732947	0.741363	1.000000	0.659720	0.099545
EM	0.692371	0.632790	0.659720	1.000000	0.347194
TA	0.229619	0.124384	0.099545	0.347194	1.000000

Regression result

Dependent Variable: CUS
Method: Least Squares
Date: 05/03/17 Time: 08:24
Sample: 1 235
Included observations: 235

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.861098	0.195565	4.403136	0.0000
RES	0.112068	0.061239	1.830021	0.0686
REL	0.048214	0.047053	1.024663	0.3066
ASSU	0.174454	0.059500	2.931976	0.0037
EM	0.342080	0.059143	5.783946	0.0000
TA	0.170534	0.042917	3.973547	0.0001
VAR1	1.770628	0.506627	3.494936	0.0006

R-squared	0.601681	Mean dependent var	4.034596
Adjusted R-squared	0.591199	S.D. dependent var	0.768198
S.E. of regression	0.491167	Akaike info criterion	1.445270
Sum squared resid	55.00387	Schwarz criterion	1.548321
Log likelihood	-162.8192	Hannan-Quinn criter.	1.486815
F-statistic	57.40094	Durbin-Watson stat	1.957041
Prob(F-statistic)	0.000000		

Serial correlation

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.059446	Prob. F(2,226)	0.9423
Obs*R-squared	0.123563	Prob. Chi-Square(2)	0.9401

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 05/03/17 Time: 08:25
Sample: 1 235
Included observations: 235
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.001411	0.196799	0.007169	0.9943
RES	-0.000972	0.061777	-0.015732	0.9875
REL	0.000873	0.047402	0.018412	0.9853
ASSU	-0.000965	0.060004	-0.016082	0.9872
EM	0.002606	0.059951	0.043463	0.9654
TA	-0.001811	0.043535	-0.041591	0.9669
VAR1	-0.005351	0.509061	-0.010512	0.9916
RESID(-1)	0.020427	0.067797	0.301298	0.7635
RESID(-2)	-0.011698	0.067387	-0.173591	0.8623

R-squared	0.000526	Mean dependent var	-2.52E-16
Adjusted R-squared	-0.034854	S.D. dependent var	0.484829
S.E. of regression	0.493206	Akaike info criterion	1.461765
Sum squared resid	54.97495	Schwarz criterion	1.594260
Log likelihood	-162.7574	Hannan-Quinn criter.	1.515181
F-statistic	0.014862	Durbin-Watson stat	2.000403
Prob(F-statistic)	0.999999		

Normality

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.059446	Prob. F(2,226)	0.9423
Obs*R-squared	0.123563	Prob. Chi-Square(2)	0.9401

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 05/03/17 Time: 08:25
Sample: 1 235
Included observations: 235
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.001411	0.196799	0.007169	0.9943
RES	-0.000972	0.061777	-0.015732	0.9875
REL	0.000873	0.047402	0.018412	0.9853
ASSU	-0.000965	0.060004	-0.016082	0.9872
EM	0.002606	0.059951	0.043463	0.9654
TA	-0.001811	0.043535	-0.041591	0.9669
VAR1	-0.005351	0.509061	-0.010512	0.9916
RESID(-1)	0.020427	0.067797	0.301298	0.7635
RESID(-2)	-0.011698	0.067387	-0.173591	0.8623

R-squared	0.000526	Mean dependent var	-2.52E-16
Adjusted R-squared	-0.034854	S.D. dependent var	0.484829
S.E. of regression	0.493206	Akaike info criterion	1.461765
Sum squared resid	54.97495	Schwarz criterion	1.594260
Log likelihood	-162.7574	Hannan-Quinn criter.	1.515181
F-statistic	0.014862	Durbin-Watson stat	2.000403
Prob(F-statistic)	0.999999		