

***AN ASSESSMENT OF SERVICE QUALITY AND INSTITUTIONAL
CUSTOMER SATISFACTION***

***(In the case of broadband internet service of
Ethiopian Telecommunication Corporation in Addis Ababa)***

BY

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ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

COLLEGE OF EDUCATION AND BEHAVIORAL STUDIES



JUNE, 2010

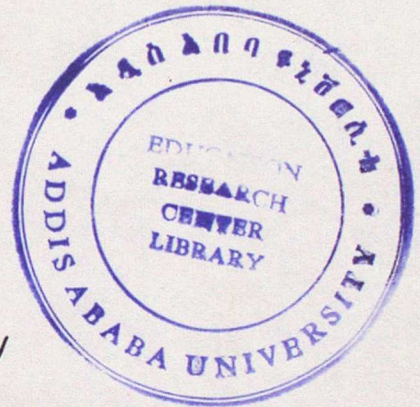
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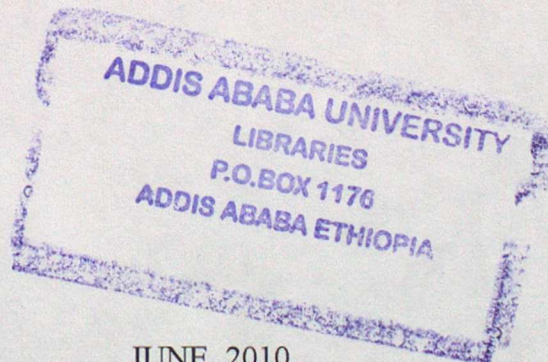
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A Thesis submitted to the school of graduate studies of Addis Ababa University in partial fulfillment of the requirements for the degree of Masters of Arts in marketing management education.



JUNE, 2010

ADDIS ABABA, ETHIOPIA

Acknowledgements

First I would like to thank God for making this all possible and I would like to thank several people for their help in this thesis. I am deeply grateful to my advisor, Dr. Bose, for his constructive suggestion and encouragement during this research.

I would also like to thank all my friends for their significant contribution during the research process.

My special thanks goes to Ato Eyob Ketema, who gave me a constructive advises during data analysis and for commenting my work with great interest. My thanks also go to Ato Teshome Dessalegn, Ato Abebe Kefale and Ato Adissu Kassaw, they helped me by providing their constructive comments on my research.

I highly thank my sister Adissie Sisay for being with me in doing my research. I would like also to thank Ethiopian Telecommunications Corporation (ETC) for its willingness to cover all my financial expenses during my stay at AAU.

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Acronyms:-

ETC–Ethiopian Telecommunication Corporation

ETA –Ethiopian Telecommunication Agency

SERVQUAL – Service Quality

FCC – Federal Communications Commission

ITU–International Telecommunication Union

Abstract

The purpose of this research is to investigate the casual relationship among service quality dimensions and overall service quality and overall customer satisfaction, and identify service quality gaps as experienced by institutional customers. Modified SERVQUAL model was used to measure the perceptions and expectations of broadband internet service customers of ETC. The study employed survey approach using structured questionnaire for the purpose of data collection, and a sample of 141 respondents was drawn using convenience sampling technique and 129 usable questionnaires were collected for final analysis. The eight modified dimensions of SERVQUAL, such as quality of network, service price, reliability, responsiveness, empathy, assurance, tangibles, and after sale service (a total of 35 statements) was used to measure customers' perceptions and expectations of the quality of broadband internet services using 7 point Likert type scale with 1 being very low and 7 being very high.

The scale reliability (Alpha) of the modified SERVQUAL model was found to be 0.953. With regard to the service quality gaps, the highest gap was found in quality of network (-3.21) followed by after sale service (-2.79). The other fundamental findings of the study were the regression models for overall customer satisfaction and overall service quality. Three regression models were found for overall customer satisfaction. In the first model, quality of network explains 36.90% the variation in overall customer satisfaction. In the second model, quality of network and after sale service as the only predictors, explains 42.80% of the variation in overall customer satisfaction and the third model explains 44.40% of the variation led by the predictors' quality of network, after sale service & empathy. Likewise, two regression models were found for overall service quality with quality of network as the only significance predictor for the first model explains 29.50% of the variation in overall service quality. For the second model, quality of network and after sale service together explains 35.90% of the variation. Since the service quality gaps for all the dimensions were negative and high, ETC has to perform a lot to narrow these gaps by managing customer expectations. In addition, quality of network & after sale service dimension were found to be the determinant of both overall service quality and customer satisfaction; ETC should focus on the items of these dimension.

Keywords - SERVQUAL, customer satisfaction, service quality, perceptions and expectations, quality gaps, broadband internet service, Ethiopian Telecommunications Corporation.

Paper type- Thesis

CHAPTER I

1. Introduction

1.1. Background of the study

Ethiopian Telecommunication Corporation (ETC) provides different kinds of services to large number of customers. Broadband internet is one of the services which were launched before few years ago, in 2004. Broadband contrasts with dial-up internet which uses modem and fixed telephone lines. Broadband internet is simply a high speed internet access and it is an advanced communication systems that transmit data, voice, and video over the internet. This service could be very expensive for individual users, and it is mostly used by small & big business enterprises, government organization, non-government organizations, international organizations and Embassies.

In the present day's highly vulnerable and rapidly changing business environment, where survival and success are challenging, every organization needs to adopt a right blend of strategies to attract, retain and maintain customers. Organizations must know it in the first phase; what exact satisfaction they have provided in the previous period? Is it sufficient to retain the customer? And what kind of services they are going to add to give maximum satisfaction to customers? Such questions are very important to meet customers need and organizational objectives.

Understanding customer behavior lies at the heart of marketing (Lovelock, 2004). Almost without exception, top service organizations have focused on customers. Effective managers understand their customers and basic working components of running their organizations. On the other hand, ineffective management only talks about quality. Thus, commitment to quality by top management is essential and it takes more than talk; it takes action (Denton, 1998).

Poor service delivery has its roots in poor management. Instead of bureaucracy, customers need flexibility. Service delivery is concerned with where, when, and how the service is delivered to the customer. This element not only embraces the visible elements of the service operating

system – buildings, equipment, and personnel- but may also involve exposure to other customers (Lovelock, 2004).

With notable developments undergoing through the ages, ETC has been able to introduce modern telecom services and cellular phone and Broadband internet. As part of the development of the corporation ETC has come up with broadband internet service in the late 2004.

Broadband internet service is the new and the latest technology service provided by ETC. There are after-sales services with the Broadband internet packages that ETC delivers to its customers and those Services are maintenance, bill collection and any request from the customer for help in information and compliant handling services.

Considering its core values, ETC says that it will be committed to understand, meet, and exceed the needs and expectation of customers. Its service objective is to give acceptable service in terms of delivery, maintenance and availability. At this time all technologies are looking towards integration of services. Integration of service means providing voice, video, audio and data on a single system. This brings forward several technical challenges the biggest being maintenance of service as per the requirement of the application and user i.e. fulfilling the Quality of Service requirement to satisfy customers.

Therefore, in this paper the researcher will focus on the assessment of service quality and customer satisfaction in the case of Institutional customers of Broadband internet service of ETC in Addis Ababa.

1.2. Statement of the Problem

A number of factors can lead a customer to dissatisfaction such as: core service failure, mistakes, billing errors, unfair pricing practices, inconvenient location, hours of operation, waiting time for service or appointments (Hawkins, 2003). Moreover, customers dissatisfaction results from service encounter failures i.e. service employees may be uncaring, impolite, unresponsive, or unknowledgeable due to unfavorable handling. In addition to this, problem of service availability, connectivity and speed of service i.e. poor service qualities are also other factors which lead to customer dissatisfaction in the area of Broadband internet service.

Few things are more irritating to customers than unresponsive service. For many customers, even if it is good service, it is not good when it is late. Customers would not appreciate standing more time in line waiting to be served. Some service providers have recognized the value of responsiveness to their customers and have incorporated it into their customers (Denton, 1998).

Customers remember missed deliveries and other unreliable services, but it seems that management does not recognize the impact that such poor quality service has on their business. The customer is confronted with many forms of evidence. Badly presented bills with meaningless information will evoke a negative reaction from the customer.

Customers' complaint is often intensifying due to the existence of organizational and employee related problems which hindered service employees to deliver quality service to customers (Tasew, 2006). Being engaged in the communication service, ETC has to improve a customer/employee interaction which plays a more significant role in service marketing.

Lack of flexibility in the service design and inability to customize the service to individual customers needs are problems identified mainly in the service delivery area. Reluctance to customers' complaints or lack of promptness in dealing with customers request for any kind of service related assistance, inefficiency and unsystematic way of handling customers' information/data are also problems discovered in customer service area. In general, not knowing what customers expect or lack of prior information of what customers expect would create the understanding gap, not designing services based on customer expectations. The service design gap i.e. not performing the service as designed. The service performance gaps are the possible gaps observed from the service provider's side and that would separate the service provider from its customers to deliver quality service-and consequently leads to customer dissatisfaction. Increasing competition and sophistication of customer requirements result managers to demonstrate that their services are customer focused and continuous improvement is being brought. Given the financial and other constraints, under which service organizations must manage, it is essential that expectations are properly understood and measured from the customers' perspective in order to identify any gaps in service quality.

This information then assists the manager in identifying cost effective ways of closing the service quality gaps and of prioritizing, which gaps to focus- a critical decision given scarce resources. In a competitive market environment, customers are the ultimate beneficiaries of the competition. However, this is not the case in the monopoly market environment like Ethiopian Telecom sector. Customers of ETC have been complaining about poor quality of broadband internet services as of its introduction in late 2004. To the best knowledge of the researcher, there is no comprehensive study conducted to measure customer satisfaction in broadband internet services, identifying service quality gaps, and modeling satisfaction through quality dimensions. Broadband internet service customers are categorized in to Residential, small and big Business, government organization, International organizations and Embassies. Therefore, this research focuses on all these types of customers to assess what problems are happening in the service quality regarding Broadband internet services delivered to them except residential customers' since the research will be focused on corporate business customers. By keeping this in mind, the researcher defined the research objectives and research questions.

1.3. Research Questions

1. In which quality dimension is the service quality gap higher?
2. What are the overall perceived service quality and satisfaction of institutional customers of broadband internet services?
3. What strong relationships are among overall service quality, overall satisfaction and each quality dimensions?
4. How significant are the dimensions in predicting overall service quality and satisfaction?

1.4. Objectives of the study

General objective

The general objective of this study is to assess service quality and Institutional customer satisfaction in the case of Broadband internet service of ETC in Addis Ababa.

Specific Objectives

1. To analyze the gap between the customer expectation and the actual performance of the broadband internet service provided by ETC;
2. To examine the overall customer satisfaction and perceived service quality of broadband internet service;
3. To determine the relative importance of each of the key satisfaction determinants in driving overall satisfaction and service quality;
4. To develop a model for service quality and customer satisfaction using the modified SERVQUAL dimensions;
5. To suggest recommendations to the Company regarding the areas of service most in need of attention.

1.5. Significance of the study

This specific research provides important information's to the ETC management and decision makers to take corrective measures regarding the issue in the service delivery, customer service and handling process of the company.

It helps for stake holders i.e. for telecommunication agency & ICT agency in setting standards.

It also benefits other researchers by serving as an input material to conduct detailed research and to evaluate the services provided by the company.

In addition to these, this study in the broadband internet service and the findings of the survey with suggested solutions assumed to be important for the Broadband internet service Division in particular and for the society as a whole.

1.6. Scope and limitation of the Research

1.6.1. Scope

The scope of the research study is restricted to look at only customers located at Addis Ababa, where the majority of them were concentrated due to time and cost constraints. Small and big business, Government organizations, International organizations & Embassies of Broadband internet users' are the focus of the study. The lists of institutional customers with full addresses are given from ETC Broadband internet Division.

1.6.2. Limitation

The major limitation of the study is that it covers limited number of sample size from all Broadband internet Customers of Addis Ababa due to time and cost constraint. It is also not manageable to take large number of sample size from all Broadband internet Institutional users' of the respective focus area so as to generalize the finding of the study.

In addition, some questionnaires have not been returned after distribution because of various reasons and the respondents were unable to keep the appointment date.

1.7. Organization of the paper

The study has been organized in five chapters. Chapter one includes general background of the study, statement of the problem, the objectives, significance and scope of the study. The second chapter constitutes the related literature review of the study. Chapter three deals about research methodology to be used, the types and method of data collections and data analysis were included in this chapter. Chapter four focuses on data presentation and analysis that is obtained from questionnaires using the appropriate statistical method and focuses on data interpretation of the analyzed information. The final and the last chapter present findings, conclusion and recommendations of the preceding four chapters.

CHAPTER II

2. Literature Review

This chapter is all about reviewing of the related literature of the study on the assessment of **service quality and Institutional customer satisfaction** in the case of broadband internet service of Ethiopian Telecommunication Corporation (ETC) in Addis Ababa. This chapter tries to identify the different theories and definitions of scholars related to the study.

2.1. Definitions and characteristics of Services

2.1.1. Definitions

“Services” according to (Gronroos, 1990) is an activity or series of activities of more or less intangible nature that normally, but not necessarily, take place in interaction between the customer and the service employee and/or physical resources or goods and/or systems of the service provider, which are provided as solutions to customer problems.

Another author (Kotler, 2004) also defined “services” as any act or performance that one party can offer to another that is essentially intangible and does not result in ownership of anything. Its production may or may not be linked to a physical product.

2.1.2 Nature and Characteristics of Service

The major difference between goods and services is that goods are produced, while services are performed. In addition, services are activities, and production and consumption are more or less simultaneous (Venugopal V. & Raghu, V.N., 2004).

According to (Kotler, & Gary Armstrong, 2004), a service company must consider four special service characteristics when designing marketing programs; these are intangibility, variability, inseparability, and perishability.

2.1.2.1 Service Intangibility

According to (Zeithaml V. & Mary Jo Bitner, 2003) what makes services different from goods is specifically its "intangibility". Because services are performances or actions rather than objects, they cannot be seen, felt, tasted, or touched in the same manner that we can sense tangible good. For example, a customer who buys broadband services from ETC- cannot see the service before purchase, all they can get is a promise from the provider that they will receive the service based on their request-all are sets of actions performed by service employees and directed toward customers.

2.1.2.2. Service Heterogeneity/Variability

A major characteristics of services is that their quality may vary greatly, depending on who provides them and when, where, and how, (Kotler, & Gary Armstrong 2004). Because services are performance, frequently produced by humans, no two services will be precisely alike. For example, when service employees delivering broadband services in ETC-they are the service in the customer's eyes, and they may differ in their performance from day-to-day or even hour-to hour and no two employees perform the same service in a similar situation.

2.1.2.3. Service Inseparability/Simultaneity

According to (Kotler, 2004) services are typically produced and consumed simultaneously. This is not true of physical goods, which are produced first, then sold and consumed. It cannot be separated from the service provider, whether the providers are people or machine. For example, if service employees in ETC provide broadband service to customers-the employee becomes part of the service and the customer is also there when the service is produced. Therefore, the customer cannot separate and take the service away from the provider- provision and consumption will take place simultaneously.

2.1.2.4. Service Perishability

Perishability refers to the fact that services cannot be saved, stored, resold or returned unlike tangible goods that can be stored in inventory for resold another day, (Zeithaml V. & Bitner, M., 2003). For example, ETC provides broadband services to customers, and the customer cannot buy the service and store it in inventory for later use like tangible goods. It is a simultaneous production and consumption of service. Perishability is linked to the notion of inseparability and simultaneity in that services must be provided and utilized at the point of consumption, during the service encounter, (Hallas, 2004).

2.2. Services versus Customer Services

(Zeithaml V. & Bitner, M., 2003) pointed out the similarities and differences between services with customer services. **Services** are offered for sale by companies. Customer service is also provided by all type of companies—manufacturers or service companies. **Customer service** is the service provided in support of a company's core products. Customer service most often includes answering questions, taking orders, dealing with billing issues, handling complaints, and perhaps scheduling maintenance or repairs. For example, ETC provides broadband internet service to customers which is a core service to the company, and also provides customer services like handling different complaints, handling billing issues, repairing services, etc. in support of the core service without charge.

2.3. Customer Expectations

According to (Zeithaml V. & Bitner, M., 2003), customer expectations are pretrial beliefs a customer has about the performance of a service that are used as the standard or reference against which service performance is judged. (Nagar R., 2002), says, satisfaction and delight are both strongly influenced by customer expectations. It is an array of possible outcomes that reflect what might, could, should, or had better not happen.

There are several different kinds of expectations that might exist for a typical customer; these could be the “ideal”, the “should”, the “will”, the “minimally acceptable” and the “worst possible” levels of expectations. The ideal expectations refer to the performance wished for in a perfect service. The “will” expectation is the average level of quality that is predicted based on all known information. **The “should” expectation is what customers feel they deserve from the transaction.** The “minimally acceptable” level is the threshold at which mere satisfaction is achieved, and the “worst possible” level on the other hand is the worst outcome that can be imagined by a given customer.

2.3.1. Levels of customer expectations

There are two levels of expectations potential customers hold before they experience service. The first can be termed as “Desired Service” and defined as the level of service the customer hopes to receive-the “Wished for” level of performance. A desired service is a blend of what the customer believes “can be” and “Should be”. For example, when ETC first introduced and announced broadband service to the public, numerous potential customers may expect to receive, a very high speed internet access accurately and dependably with reasonable price, and they may hold this desire until they encounter the company’s service.

Customers hope to achieve their service desires but recognize that this is not always possible. For this reason they hold another, lower-level expectation for the threshold of acceptable service. This lower expectation has been termed “adequate service-the level of service the customer will accept”. Adequate service represents the “minimum tolerable expectation.” the bottom level of performance acceptable to the customer, and reflects the level of service customers believe they will get on the basis of their experience with services. The above same example, when customers’ ideal level of expectations regarding high speed and accurate broadband service may not always possible, so they may hold another lower-level of expectations and performance from the company- this could be high speed internet access which is different from dial-up, reasonable tariff, quick service

assistance when interruption occurs, and compensation for unused service when frequent service interruption occurs from the side of the provider, (Zeithaml V. & Bitner, M., 2003). The following figure shows these two expectation standards as the upper and lower boundaries for the expectation. This figure portrays the idea that customers assess service performance on the basis of two standards: what they desire and what they deem acceptable.

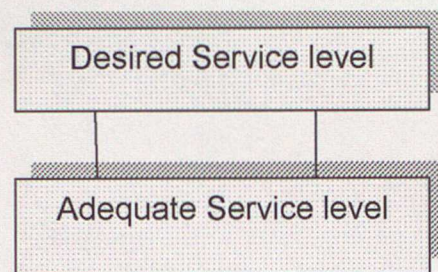


Fig. I: Levels of customer expectations

2.3.2. The Zone of Tolerance

In their discussion (Zeithaml V. & Bitner, M., 2003), services are heterogeneous in that performance may vary across providers, across employees from the same provider, and even within the same service employee. The extent to which customers recognize and are willing to accept this variation is called "The Zone of Tolerance" and is shown below.

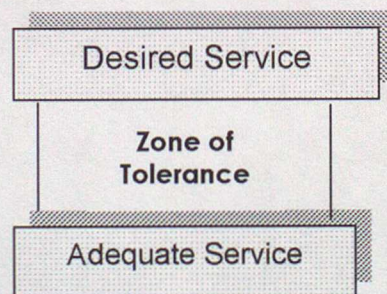


Fig. II: The zone of tolerance between the two levels of customer expectations

If service drops below adequate service-the minimum level considered acceptable-customers will be frustrated and their satisfaction with the company undermined. If a service performance is outside the zone of tolerance at the top end where performance exceeds desired service, customers will be very pleased and probably quite surprised as well. You might consider the zone of tolerance as the range or window in which customers do not particularly notice service performance. When it falls outside the range (either very low or very high), the service gets the customer's attention in either a positive or negative way.

For example, consider broadband service provided by ETC, and also consider the stated standard for broadband service delivery by ETA-it should not exceed seven days at the maximum. When a given customer requests to buy the service-the customer may hold a range of acceptable time to receive the service probably be 7 to 9 days. If the company consumes that period of time, the customer may not give much attention to the wait. If the company provides the service within 7 days, the customer may judge the service as excellent. On the other hand, if the customer has to wait 15 days and above to get the service, it would be below the zone of tolerance and becomes more frustrated about the company's overall performance.

2.3.3. Sources of customer expectation

When customers are interested in purchasing services, they are likely to seek or take in information from several different sources. According to (Zeithaml V. & Bitner, M., 2003), the two sources of customer expectations are explicit and implicit service promises. Explicit service promises are statements made by the company through advertising, brochures and other written publications. Explicit service promises influence both the levels of desired service and predicted service. They shape what customers desire in general as well as what they predict will happen in the next service encounter from a service provider. There are several factors that influence customer expectations of services, these are, personal needs, external communication by the service provider, word of mouth and past experience (Watkins, C., 2006).

The implicit service promises are service related signs or cues other than explicit promises that lead to inferences about what the service should and will be like. These quality cues are dominated by price and-the more impressive the tangibles-the more a customer will expect from the service. For example, customer may obtain information about broadband service from explicit information advertising by ETC on different media and with that potential customers may hold several kinds of expectations concerning the service. At the same time, customers will also seek implicit information through other sources-that leads them to assume what they will be like.

2.3.4. Contact personnel's perceptions of customers' expectations

This gap consists of a discrepancy between the contact personnel's perceptions of customers' expectations and the customers' real expectations. This gap can have a significant impact, because it addresses the need of contact employees to understand customer expectations and experiences (Brown & Swartz, 1989). Customer perception is their reality-it is the customer judgment about the actual performance or delivery by a company (Watkins, C., 2006). For example, ETC's contact personnel's might perceive that, customers will obtain broadband service based on the company's requirement and procedures. However, the customer may probably expect to get, not only the service but also expect flexible service for their individual needs, adequate information with available options, guarantee and assurance of a better quality service for the price they are willing to pay. This kind of situations may create understanding gap between the contact personnel's and customers.

2.3.5. Management perceptions of customer expectations

According to (Selvam, M., 2006), and adopted by (Zemke & Schaaf, 1989), that managers and employees may pay more and more attention to things of less and less important to customers. As a consequence, they remain blind to what customers actually value. Some of the causes for this blindness maybe are managers and employees education, the different habits developed over time in the company and policies and procedures of the company.

This gap defined as the discrepancies between management lack of understanding of customers' expectations and perceptions of the service, and it is motivated by both lack of initiative ness to listen to customers, (Zemke & Schaaf, 1989), and by a lack of correct understanding when these initiatives are taken, (Parasuraman et al., 1985). This kind of gap is created as a result of the lack of marketing research orientation, inadequate upward communication and too many layers of management, (Curry, 1999; Luk and Layton, 2002). As an example, consider ETC's broadband services, both the management and the employees probably give more attention to rules and procedures, and hence, employees are forced to serve customer based on the rules stated by the company; this habit may not be relevant to customers-what is more important to customers' may be to get quick and reliable service from the company.

2.3.6. Managing Customer Expectations

Managing customer expectations is a critical component in the marketing plan of service business. Customer expectations must be managed during the pre-purchase phase, the service encounter, and the post-purchase phases. The ideal goal for the firm is to promote the exact service customers will receive and to provide the exact customers expect. If firms can match expectations and service, customers are satisfied, (Zeithaml, A., 2003).

During the pre-purchase phase, to manage customer expectations, service companies should first learn what customers expect through communicating customers, tell what they can expect through explicitly advertising and sales personnel's, and through providing consistent service that they expect. For example, when ETC first launched broadband service-the service is communicated to customers through explicit advertising-at this phase the company should be very careful in setting the right expectations or promote exactly what customers will receive.

Communicating customers is also a major activity that should be done during the service encounter phase (moment-of-truth) of managing customer expectations. Secondly, if possible, providers should modify the service to meet customer expectations and thirdly, if the service cannot be modified, the service personnel should explain why customer

expectations cannot be met. The goal during this phase is to ensure the service being provided matches customer's expectations. For example, when customers first encounter ETC to obtain broadband service-they came with their expectation in mind- and at this stage, therefore, providers must communicate customers to learn their expectation and to modify the situation on the spot to meet for their satisfaction.

Managing customer expectations do not stop after the service is performed. The strategy during this phase is developing a follow-up program such as evaluation survey and the company has to have a procedure to deal with unsatisfied customers that can assist in managing future expectations. Preparing panel discussion frequently with broadband customers to obtain feedback concerning the service delivery maybe appropriate for ETC to identify and manage future expectations.

2.4. The Service Attitude

The employees especially the contact personnel in a service organization need to have a particular "service attitude" to accomplish the goal of delivering excellent service quality and a market oriented service. This doesn't necessarily mean that the employees have to be servile and accept everything customers want. What is important though is that customers know what they can expect from the service provider and what they are expected to do themselves. This relates to the issue of managing customer expectations a major marketing responsibility.

The importance of a person's service attitude has to be taken in to account when selecting new employees. After that, training is necessary to generate and encourage the attitude. The question can be raised- what exactly is a service attitude? Which resources and capabilities (skills, knowledge, equipment, procedures, etc.) are needed? A distinction can be made in to three different groups of resources and capabilities:

- Technical know how about the service;
- Ability to serve customers well and maintain the quality of the service; &
- Ability to work in a team. (kasper,1999, Pp 450-451)

2.4.1. Technical know how about the service

Through knowledge of the latest developments in the business is a prerequisite when one wants to deliver a good service. The employees need to have the skills and routines to apply this know how in an appropriate way so that customers are satisfied. These skills are necessary to meet the standards set for the technical quality. There are, of course, other prerequisites which are linked to the functional and relational quality; then, the personal touch comes to the fore or placed in front. In the many studies carried out about service quality, it appears that technical quality is not decisive to the customers but the functional or relational quality is. The technical quality has to meet a certain minimum quality level, but the other two are decisive in the customers' final assessment of service quality, (kasper, 1999, p 451).

2.4.2. Ability to serve customers well and maintain service quality

Contact personnel, when delivering a service, should be able to really serve customers. What does this general and obvious statement imply? It has to do with many dimensions of the SERVQUAL-model (amongst others, responsiveness) determining the functional and relational quality to a large extent. That is why it is important that each member of the contact personnel is sensitive to the situation of the customer in that moment of the service encounter; can understand the customer; can communicate with the customer; can ask the right questions, find out what the customer really wants and needs; and show customers some alternatives from which they can choose and what fits them best. Contact personnel also need an attitude enabling them to deliver an intangible service to the customer and make the customer feel at ease so they can then deal with any uncertainty. An employee with the right attitude is able to deliver excellent service to the individual customer who asks for a customized service, as well as to a group of customers satisfied with a standard service, (Kasper, 1999, pp 451-453).

2.4.3. Working in a team

The third kind of skills and knowledge relevant to a real service attitude is called team work or working in a team. It refers to one of the ways to close gap 3 of the SERVQUAL-model. Especially in large service organizations like banks, telecoms and insurance companies, the customer is likely to be served by different employees. The employees together, then, should be able to deliver excellent service. This makes it necessary for each employee to know the arrangements made with the customers by each of their colleagues. Therefore, it is important that the internal communication and administrative work is efficient, effective and well known to all colleagues. If the communication doesn't occur in the proper way, the quality of the service will be negatively influenced, (Kasper, 1999, p 454)

2.5. The Service Quality Gaps

According to (Venugopal V. & Raghu, V.N., 2004), service quality defined as the difference between customer expectations and performance delivery. Service quality gap is the difference between customer expectations of service beforehand and perceived service. If expectations are greater than performance, then perceived quality is less than satisfactory and hence customer dissatisfaction occurs. According to (Watkins, C. 2006), high level of service quality are only achieved by having good-quality, well-trained staff which is highly motivated to service customers.

(Bitner M., 2007) also conceptualize service quality gap as the difference between what customers expect to get beforehand and what they perceive they got afterward. Expectations are the reference points customers have, coming into a service experience; perception reflects the service as actually received. The idea is that firms will want to close this gap between what is expected and what is received to satisfy their customers and build long-term relationships with them. For example, when ETC's introduces broadband service-potential customers may start to hold different kind of expectations concerning the new service. Customers' sources of expectations maybe explicit information made by the company through advertising and/or implicit information

customers obtain from other sources-and if discrepancies occurred between expectation and perceived performance, a gap will be created and this leads to customer dissatisfaction.

Conceptually the service quality process can be examined in terms of gap between expectations and perceptions on the part of management, employees, and customers. Gaps at any point in service design and delivery can damage relationships with customers (Ghobadian, Speller & Jones, 1994).

There are five major gaps in the service quality concept as identified by Parasuraman, Zeithaml and Berry (cited in Hoffman and Bateson 2001, p.327). However, the service gap (gap 5), between customers' expectations of service and their perceptions of service actually delivered, is the most critical one. Hence, the ultimate goal in improving service quality is to close or at least narrow this gap as much as possible. Therefore, service giving organizations may need to work on one or more of the other four gaps since service gap is a function of the remaining service quality gaps. Improving service quality requires identifying the specific causes of each gap and then developing strategies to close them.

2.6. The GAP model of service quality

According to (Nagar, R., 2002) the gap model offers an integrated view of the consumer-company relationship. In this case expected service is a function of word of mouth communication, personal needs and past experience, and perceived service is a product of service delivery and external communications to consumers.

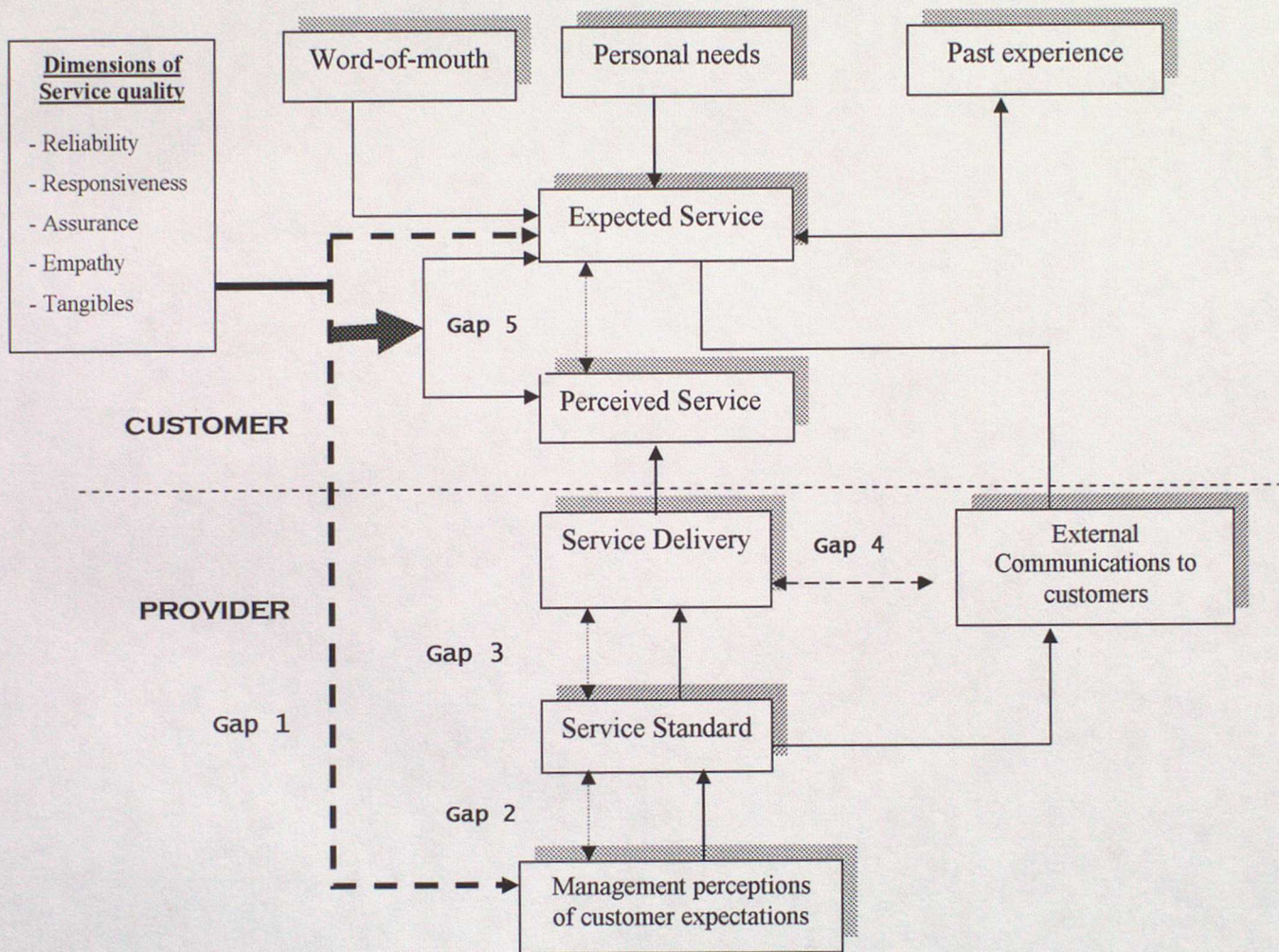


Figure III: GAP Model of Service Quality (Nagar, R., 2002)

(Nagar, R., 2002), discussed the above five gaps that could be created from both the customer and the service provider's side.

Gap 1- This is the overall gap between the service provider and customers. It represents the gap between expectations versus management perceptions. It states that many organizations do not understand what customers expect in service and also inadequacy in upward communications and too many layers of management.

Gap 2 – This gap represents the management perception versus service standard. Service organization often experience great difficulty in even meeting far less exceeding customer expectations. This is invariably attributed to a number of factors-absence of total management commitment to service quality, lack of resources, and excessive demand could be the caused for this gap.

Gap 3 - This gap represent the discrepancy between service specification/standard and the service delivery. Even when formal standards or specifications for maintaining service quality are in existence, the delivery of quality service is by no means certain. The main reason given is that the performance of customer contact personnel can be so variable/ poor employee-job fit and inappropriate supervisory control systems within the company.

Gap 4 – This gap represent the difference between service delivery and external communication. Advertising other forms of communication by a service organization can affect customer expectations. The danger is that promises made may not be kept. It should be a statement of what the customer will receive, not an attractive set of promises that cannot be delivered.

Gap 5 - This gap represents the discrepancy between customer expectations and their perception of the service delivered. To ensure good service quality the provider must meet or exceed customer expectations.

As mentioned above, the SERVQUAL instrument measures the gap between customer expectations and perceptions. This gap will occur if any or all of gaps 1 to 4 exist. The first four gaps (Gap1, 2, 3, and 4) are identified as functions of the way in which service is delivered, where as Gap5 pertains to the customer and as such is considered to be the true measure of service quality. The gap on which the SERVQUAL methodology has influence is Gap5. However, it is important to note that without adequate information on both the quality of services expected and perceptions of services received, feedback from customer surveys can be highly misleading on policy and operational perspective. The developers of the SERVQUAL instrument argue that adding expectation section enhances the managerial usefulness of the scale as a diagnostic tool because of the gap scores developed for each dimension. Perception scores alone merely rate whether the respondent agrees or disagrees with each question (Spiller, Bolten and Kennerknecht, 2006).

2.7. The importance of service quality gap analysis

The main reason for which gap analysis is important to firms is the fact that gaps between customer expectations and customer experiences lead to customer dissatisfaction. Consequently, measuring gaps is the first step in enhancing customer satisfaction. Gap analysis is the technique utilized to determine where firms exceed or fall below customer expectation, (Zeithaml V., 2003). The GAP analysis model possible guides the management to find out the real reasons for quality problems and to discover appropriate ways to close such gaps. The understanding of the possible gaps will help the management to check various levels and prevent possible errors. A thorough audit of all these possible errors, time and again, will make the service provider confident and such confidence percolates to the frontline employees of the organization; they can then perform well in encounters with customers, (Rao, 2007, P159).

2.8. The Link between Service Quality and Customer Satisfaction

The concepts of perceived quality and satisfaction are two of the fundamental pillars of recent marketing research. Research indicates that customer satisfaction and service quality are distinct, but interrelated concepts, although Cronin and Taylor (cited in Stafford, MR, Stafford, TF and Wells 1998) point out that this relationship is not clear; the confusion probably stems from their common link to the disconfirmation paradigm. There are at least two different conceptualizations of customer satisfaction, one is transaction specific, and the other is cumulative. Transaction specific satisfaction is generally associated with one particular transaction at a particular time, and has been defined as an emotional reaction to a product or service experience. In contrast, cumulative customer satisfaction is an overall evaluation based on the total purchase and consumption experience with a product or service overtime, which is more fundamental and useful than transaction-specific consumer satisfaction in predicting a consumers' subsequent behaviors and a firm's past, present and future performance. Therefore, it is the cumulative customer satisfaction that motivates the firm's investment in customer.

Service quality is considered to be more congruent with a long-term attitude (Bolton and Drew, Parasuraman et al., cited in Stafford, MR, Stafford, TF and Wells 1998, pp.428-429). In sum, satisfaction is generally considered more experiential, transitory, and transaction-specific, while a perception of service quality is believed to be more enduring.

Additionally, operationalization of customer expectations is probably another critical distinction between the two concepts. Expectations that motivate customer satisfaction are based on predictions of what is likely to happen during a transaction, while expectations that drive service quality evaluations are based on consumers' desires or wants, and are motivated by what a consumer believes a service provider should offer (Hoffman and Bateson 2001, p.334).

As research indicates, the other unresolved issue in the area of service quality is whether customer satisfaction leads to service quality or vice versa. Some researchers supported the argument that customer satisfaction leads to service quality. For example, Bitner (cited in Ismail, et al. 2006) developed a model of service encounter evaluation and empirically supported the effect of satisfaction on service quality. Bolton and Drew (cited in Robinson 1999) also proposed that satisfaction leads to service quality.

In contrast to this perspective, some other researchers argued and empirically supported that perceived service quality is an antecedent of customer satisfaction. Cronin and Taylor (cited in Lee, H, Lee, Y and Yoo 2000, p.221) reported that in their structural analysis for the causal relations among satisfaction, overall service quality, and purchase intention, the coefficients of path for service quality to satisfaction to re-purchase intention appeared to be all significant while the coefficients of path for satisfaction to service quality to re-purchase intention were insignificant. Similarly, Oliver (cited in Bigne, Moliner and Sanchez 2003, P.422) suggested that service quality could be an antecedent of customer satisfaction, irrespective of whether this construct is measured for a single experience or over the course of time.

From the above arguments, satisfaction and service quality are not unrelated. In fact, high levels of service quality should result in highly satisfied consumers. In this sense, assessment of satisfaction is a useful final check on the quality delivery process. However, a service quality approach such as SERVQUAL can aid in the improvement of quality delivery to help ensure that the final check indicates satisfied rather dissatisfied customers (Spreng and Singh, cited in Stafford, RM, Stafford, FT and Wells 1998, p.429).

2.9. Customer Satisfaction

- **On (dis)satisfaction in general**

Customers not only evaluate the service delivery after the process has taken place, but this also happens during the process. Consequently, it is necessary to look at the emergence of satisfaction or dissatisfaction about services in many ways. It appears to be

useful to distinguish here between overall satisfaction and dissatisfaction with the service encounter. The overall satisfaction or dissatisfaction comprises of the (dis)satisfaction of the whole service delivery process or the evaluation of all the service encounters that have taken place in the past.

The “service scape” is also very important here. This concept applies to the physical surroundings in which the service is offered. Their functionality and aesthetic appeal are relevant for the service here. All these topics refer to unique aspects of the marketing mix in services namely people, process and physical evidence. A greater perceived control by the customer may decrease potential source of customer dissatisfaction.

In general, it appears the interaction with the participants in the service encounter (customer, employee, other customers and waiting) are dominant issues in becoming dissatisfied about services.

We believe that customers check whether their expectations are in line with the actual experiences of the service and service delivery. On the basis of such an evaluation of expectations and perceptions, the customer will turn out to be satisfied or not. Cognitive as well as affective issues play a role in this process. Looking for gaps between expectations and perceptions is crucial to detect what should be improved or not.

This method of reasoning about the emergence of (dis)satisfaction is based on the (dis)confirmation paradigm. The basic idea is about the confirmation or disconfirmation of expectations and actual experience or perceptions. Satisfaction will emerge in two situations:

1. when an actual service meets the customer expectations; or
2. when the actual service exceeds the expectations.

Dissatisfaction will occur when the actual service is below the expected level (negative disconfirmation). So, satisfaction and dissatisfaction are the outcome of a subjective evaluation process. The degree of (dis)satisfaction and the past attitude about the service, in turn, will determine the “new” attitude towards the service, which will affect the intention to rebuy the service.

Customers can undertake different kinds of action to express their satisfaction or dissatisfaction. Satisfaction can be expressed in many ways, like positive word-of-mouth, giving compliments to the service provider, loyal to the service organizations and the relationship is continued. When customers are dissatisfied, they can undertake different kinds of action as well. For example by complaining to the service provider, never visit the service provider again and switching to another service provider. (Hans Kasper, 1999 Pp. 205-208).

Customer satisfaction is a measure of how products and services supplied by a company meet or surpass customer expectation. In a competitive marketplace where businesses compete for customers, customer satisfaction is seen as a key differentiator and increasingly has become a key element of business strategy.

There is a substantial body of empirical literature that establishes the benefits of customer satisfaction for firms.

Organizations need to retain existing customers while targeting non-customers; Measuring customer satisfaction provides an indication of how successful the organization is at providing products and/or services to the marketplace.

Customer satisfaction is an abstract concept and the actual manifestation of the state of satisfaction will vary from person to person and product/service to product/service. The state of satisfaction depends on a number of both psychological and physical variables which correlate with satisfaction behaviors such as return and recommend rate. The level of satisfaction can also vary depending on other factors the customer, such as other products against which the customer can compare the organization's products.

Work done by Parasuraman, Zeithaml and Berry, L.L. between 1985 and 1988 delivered SERVQUAL which provides the basis for the measurement of customer satisfaction with a service by using the gap between the customer's expectation of performance and their perceived experience of performance. This provides the researcher with a satisfaction "gap" which is semi-quantitative in nature. Cronin and Taylor extended the disconfirmation theory by combining the "gap" described by Parasuraman, Zeithaml and

Berry as two different measures (perception and expectation) into a single measurement of performance relative to expectation.

After-Sales Service:- According to Goffin (1999) After-sales or Post-sales service, which is also referred to as customer support, technical support, is essential for achieving customer satisfaction and good long-term relationship as identified by a number of researchers.

Service traditionally has been considered a post-sale capability, primarily focused on problem solution or providing technical assistance. After-sales service is often in response to a customer problem, e.g. service failure restoration, problem diagnosis, expert assistance to resolve a problem etc. therefore, after-sales service is a recovery process that attempts to resolve customer problem, which, if not resolved, causes dissatisfaction and less satisfied customer. The after-sales service function, therefore, attempts to recover the customer satisfaction to the level it was before the occurrences of problems (Gronroos, 2000).

Herve Mathe (1999) also emphasizes on after-sales service as a strong marketing tools, which helps firms to be competitive in the market. He mentions; service is proving to be a source of competitive advantage that enables firms to remain leaders in a highly competitive market or to create differentiation which will enables a challenger to attack and overtake the leader.

2.10. Conceptual frame work for Customer satisfaction

The transition from a manufacturing to a service-based economy is encouraging the intensive development in the services industry. Consequently, customer service has emerged as a key differentiator in highly competitive industries. Since service plays an important role in every organization, service quality takes on an immensely significant position in business performance in this 21st century. While literature on quality has been predominantly product oriented, several contributions have focused on service quality (e.g. Lewis & Booms, 1983). Zeitham et. al. (1990) indicates that the criteria customers

use for evaluating service quality include comparing consumer expectations with the actual service performance. Thus, the perceived service quality is based on a customer's judgment on overall service excellence or superiority. Perceived service quality is, therefore, different from the actual product quality because it involves a higher level of abstraction rather than a specific attribute of a product (Chen, Gupta & Rom, 1994). According to Parasuraman et al. 1985, p. 42, service quality is defined as "the comparison between customer expectations and perceptions of services". Customers compare their expectations on a number of attributes and the perceived outcome of this attributes towards services. Originally, Parasuraman (1985) identified ten attributes that are important to increase service quality. Subsequently, Parasuraman (1988) streamlined the attributes to five main dimensions, namely Tangibles, Reliability, Responsiveness, Assurance and Empathy, and called the model SERVQUAL. SERVQUAL is a very useful instrument in service quality research, which helps to adequately understand customers' expectations (Gupta et. al., 2005).

Prior studies investigate the concept of satisfaction on service setting (e.g. Deruyter et. al., 1997; Fornell, 1992). Satisfaction can be assessed based on the customer's satisfaction attitude on various attributes of the product or service. Satisfaction, however, is a construct that requires input from experienced customers, a main departure from attitude, which is a pre-decision construct. Customer satisfaction is the feeling or attitude of a customer towards a product or service after use. It is the psychological process of evaluating perceived performance outcomes based on predetermined expectations (Egan, 2004). Based on the definition of service quality by Parasuraman (1985), smaller discrepancy between expected service quality and perceived service quality means customers are satisfied with the service quality provided by the service provider. A positive feeling of satisfaction could lead to customer retention and therefore to high profitability (Egan, 2004). Customer retention is important when there is more than one player in a market. In Ethiopia, there is only one service provider regarding broadband internet service that is Ethiopian Telecommunication Corporation (ETC). So, broadband customers can't easily switch to another due to unavailability of service provider if customers are not satisfied with the service quality provided by ETC. A number of

studies in different field confirmed that service quality is the antecedent towards customer satisfaction. (Cronin & Taylor, 1992; Deryuter et. al., 1997). Parasuraman, et al. (1991) argues that service quality can be enhanced by focusing on five dimensions depicted in the conceptual framework. These five dimensions measure customer expectations and perceptions of service quality and are discussed in the following passages.

Tangibles – refers to everything in a service provider that can be physically observed by customer, who is purchasing a service, including equipment, personnel, physical facilities, materials and appearance. These qualities provide concrete cues for customers to evaluate the capability of the service provider. Well-skilled first line personnel, the quality of products, brochures and cards, may represent broadband internet service provider tangibles.

Reliability – refers to the trust to company's ability of performing service in a proper way, such as acting according to promises and declarations. A reliable internet service provider means the internet service provider which is able to provide internet connection that is working at desired level of throughput, without significant failures, according to declarations and agreement between internet service provider and user.

Responsiveness – refers to service provider's willingness to help customers and provide prompt service. It can be measured by the amount of time needed to deal with customers' reported problems and the response duration once the customer filed a service request. For example, responsiveness of the service provider evaluates the time taken to response with customer's complaints on Internet connection disruptions, duration of problem solving and feedback to the customers.

Assurance – is the knowledge and courtesy of employees and their ability to inspire trust and confidence. Since risk (such as money loss) is involved when customer decides to acquire service from a service provider, assurance is important to demonstrate cue to increase customer's trust and confidence. Service provider may demonstrate assurance to customers by behaving courteously and by providing essential knowledge to guide customer's problems.

Empathy – refers to the caring, individualized attention the service provider gives to its customers. There may be many services provided by service provider. Furthermore, customers who subscribe to an internet service come from different social background and hence service provider could emphasize personalized attention on customers and understand specific needs of customer based on their requirements.

Modified SERVQUAL Dimensions

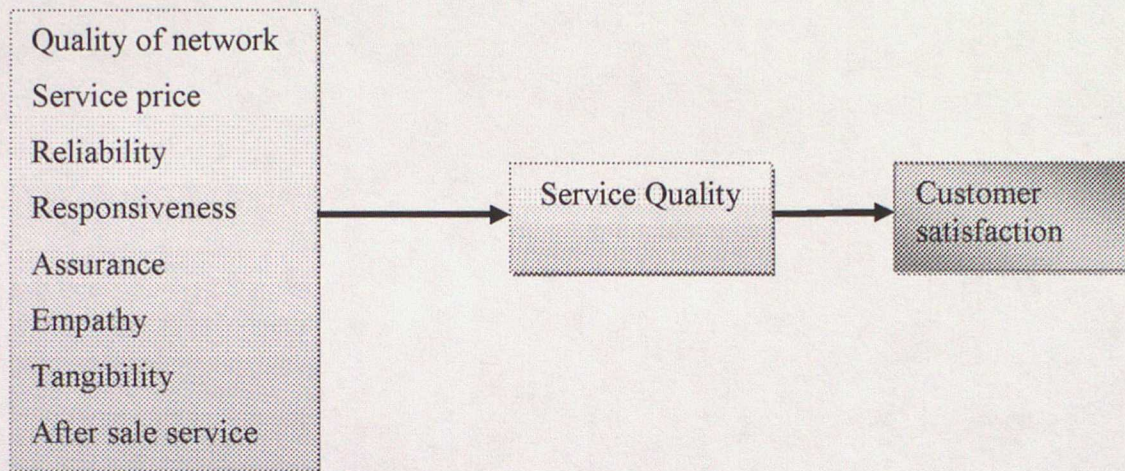


Figure IV: Conceptual Framework for Service quality & Customer Satisfaction

(Source: Researcher own model)

2.11. General Overview of Broadband

2.11.1. What is broadband?

The term broadband commonly refers to high-speed Internet access. The Federal Communications Commission (FCC) an independent US government agency, defines broadband service as data transmission speeds exceeding 200 kilobits per second (Kbps), or 200,000 bits per second, in at least one direction: downstream (from the Internet to the user (computer) or upstream (from the user (computer to the Internet).

2.11.2. How is broadband different from dial-up service?

- Broadband service provides higher speed of data transmission, allows more content to be carried.
- Broadband provides access to the highest quality Internet services. Many of these current and newly developing services require the transfer of large amounts of data which may not be technically feasible with dial-up service. Therefore, broadband service may be increasingly necessary to access the full range of services and opportunities that the Internet can offer.
- Broadband are always one that does not block phone lines and no need to reconnect to network after logging off.
- Less delay in transmission of content when using broadband.

2.11.3. Why is broadband important?

Broadband can provide us with the technical capability to access a wide range of resources, services, and products that can enhance your life in a variety of ways. These resources, services, and products include, but are not limited to:

- Education, Culture, & Entertainment
- Broadband can overcome geographical and financial barriers to provide access to a wide range of educational, cultural, and recreational opportunities and resources.

- Tele health & Telemedicine
 - Broadband can facilitate provision of medical care to unserved and underserved populations through remote diagnosis, treatment, monitoring, and consultations with specialists.
- Economic Development/E-Commerce
 - Broadband can promote economic development and revitalization through electronic commerce (e-commerce) by:
 - Creating new jobs and attracting new industries.
 - Providing access to regional, national, and worldwide markets.
- Electronic Government (E-Government)
 - Electronic government can help streamline people interaction with government agencies, and provide information about government policies, procedures, benefits, and programs.
- Public Safety and Homeland Security
 - Broadband can help protect the public by facilitating and promoting public safety information and procedures, including, but not limited to:
 - Early warning/public alert systems and disaster preparation programs.
 - Remote security monitoring and real time security background checks.
 - Backup systems for public safety communications networks.
- Broadband Communications Services
 - Broadband provides access to new telecommunications technologies such as Voice over Internet Protocol (VoIP) allowing voice communication using the Internet.
- Communication Services for People With Disabilities Broadband permits users of Telecommunications Relay Services (TRS) to use Video Relay Services (VRS) to communicate more easily, quickly, and expressively with voice telephone users.

2.11.4. Broadband Network Access

Like most technology driven industries, the telecommunication sector has historically, been characterized by steady growth punctuated by an occasional leap forward, usually when a new technology is introduced. In the latter part of the twentieth century, almost simultaneous arrival of two major innovations, mobile phones and the Internet- not only changed the face of communications, but also gave fresh impetus for economic growth.

In response to this the corporations is committed to accelerate its broadband network infrastructure development. The network in its coverage shall connect key business centers and higher institutes nationwide where there is terrestrial infrastructure in place. The network utilizes Digital Subscriber Line (DSL) using copper; Fixed Wireless Access in Addis Ababa & in some regional towns based on the customers demand.

CHAPTER III

3. Research Methodology

Customer perception and behavior is a broad concept that is related to many factors of the service delivery of an organization. The success of the analysis mostly depends on the Methodology on which it is carried out. For the purpose of assessing service quality and customer satisfaction in the case of Broadband internet Institutional customers of ETC in Addis Ababa; the research type, population size & sampling technique and data collection instruments are discussed as follows.

3.1. Research Design

Quantitative research is used to measure how many people feel, think or act in a particular way and it is used also to measure customer attitudes, satisfaction, commitment and a range of other useful market data that can tracked over time and these surveys tend to include large samples. Thus, this study used quantitative research method through constructing a self administered & well structured questionnaires and distributing to sample respondents. Both descriptive and inferential statistical techniques were employed to analyze the data and draw conclusion from the sample.

3.2. Population Size and sampling Technique

In general until the end of June, 2009G.C, the number of active Broadband internet corporate customers through ADSL & Fixed Wireless Access is a total of **1,211** customers. Out of the total active customers **249** are located at region and **962** are found in Addis Ababa. For a much more convenient way Broadband customers are segmented based on Residential, Small & Big business, Government organizations, International organizations & Embassies. (ETC's broadband division, report paper June, 2009 G.C.)

Looking at the population size, concentration and budget available, the researcher used 15% of all categories except residential customers in Addis Ababa for a better representativeness of the sample drawn. Data were collected from three category type of customers through well structured questionnaires.

The following table shows range of direct broadband internet customers of ETC in Addis Ababa

Table 1: Institutional customers' classification

No.	Category Type	No. of Subscribers	Sample size To consider	
			percentage	in number
1	Government organizations	227	15%	34
2	Small and Big Business	458	15%	68
3	Int'l Org. & Embassies	260	15%	39
	Total	945	15%	141

Source: ETC Broadband Division report, June, 2009.

The **Sampling technique** followed in this research is convenience sampling.

As the name implies, convenience sampling is a method in which samples are drawn at the convenience of the researcher, often as the study is being conducted (Joseph F.Hair, 2003.P 359). Convenience sampling is sampling technique not based on random selection or probability; the researcher simply selects those who are convenient as respondents; members of the population are chosen based on their relative ease of access.

To make it clear, I have got the list of the total customers from ETC broadband Division. From the list I select the sample respondent based on researcher convenience in geographic location. For example, the researcher identifies the institutional customer which locates around Stadium the majority, Mexico, Piassa, Bole, Arat killo, kassanchis, Gotera, Sidist Killo.

3.3. Types of Data Collection

- Data were collected from primary and secondary sources.

3.3.1. Primary data sources

The questionnaires were developed based on the research questions and objectives. The survey used a standardized questionnaire that includes detailed questions on factors that affect customer satisfaction on Broadband internet service such as maintenance service, after-sales services, service quality, service price, service availability, speed, service connectivity, billing service and complaint handling services. The questionnaire was originally developed in English and translated to local language Amharic version by experts who engaged in translation business. This helps to provide respondents freedom to fill the questionnaire with proper understanding at their own potential without the researcher's influence especially for small organizations i.e. internet Cafes.

As suggested by Parasuraman, Zeithamal, and Berry (1988: cited in Ross and Tyran 2006) it can be appropriate to modify the items of the SERVQUAL instrument to make the survey more relevant to the context of a particular service environment. For this research, the 22 statements in the SERVQUAL were modified to best fit the telecom service industry particularly to broadband internet services and include three additional service quality criteria which are adapted from different literatures. The additional quality criteria that affect customer satisfactions are quality of network (N.R.M. Suradi, z. Mustafa, 2008, p 4), after sale service and service price are incorporated in the SERVQUAL dimension.

Therefore, the modified service quality dimensions contains eight dimensions such as reliability, responsiveness, empathy, assurance, tangibles, quality of network, service price and after sale service. From this, the final study used a total of 35 statements (Annex I) with eight quality dimensions and two more questions.

The questionnaire composed of three major parts. The first part includes respondent's demographic profile, the second part institutional customer's expectations and perceptions and the third part contains their overall satisfaction and service quality.

Measures: - In measures of customer satisfaction, skewed frequency distributions represent a serious threat to the validity of the statistical results (Anderson & Fornell, 2000).

In order to avoid that problem, a seven-point Likert-type scale was utilized since it enables respondents to make better discriminations (Andrews, 1984). The use of a fairly high number of scale categories as well as multiple questions per constructs was expected to yield valid data.

Thus, all items are placed on a seven point Likert type scale ranging from 1 as “very low” to 7 as “very high” for their perception & expectation and for service quality 1 as “very poor” to 7 as very good.

The questionnaires have been delivered by hand to each respondent and are collected later. The distribution of questionnaire was conducted by the researcher and by some front line employees in the organizations i.e. secretaries of the organization. During questionnaire distribution proper orientation has been given by the researcher to respondents on how to fill the questions to avoid any ambiguity that may arise.

Finally, from the distributed 141 questionnaires to the respondents of the study, 129 (91%) completely filled questionnaires were collected for the purpose of final analysis. The rest 9% was not returned from respondents due to unwillingness to fill the questionnaires.

3.3.2. Secondary data Source

Furthermore, the study was supplemented by the secondary data obtained from Broadband internet service Division, customer service manuals and other documents as well. In order to have more knowledge and to fulfill the need of information about the study, the researcher have been allocated much time to read books, research articles, magazines, journals, websites, ETC manuals and from other relevant publications.

3.4. Methods of Data Analysis

After the Completion of data collection, the data was grouped, classified and verified accordingly. The analysis was made thoroughly with the help of the computer program **SPSS 15.0 (Statistical Package for Social Science)** which helps to look for possible pattern and relationship among variables of the study. Frequencies of each demographic variable are computed. Reliability of the data was assessed by using Cronbach's Alpha. Higher Alpha coefficients indicate higher scale reliability. Specifically, (Nunnally, 1978) suggests that scales with 0.70 Alpha coefficients and above are considered acceptable. The result of the analysis was presented clearly in understandable manner with tables, graphs and pie charts. Finally, based on the results and the findings of the study, conclusions and possible recommendations are forwarded.

3.5. Ethical Considerations

In order to keep the confidentiality of the data given by the respondents, the respondents are not required to write their name and have been assured that their responses would be treated in strict confidentiality. The purpose of the study and its expected benefit to the respondents and to ETC had been disclosed in the introductory part of the questionnaire.

Furthermore, misleading and deceptive statements have been avoided and have not been included in the study. The distribution of questionnaires was done only to the willing and volunteer institutional customers.

CHAPTER IV

4. Data Analysis and Discussion

4.1 Data Analysis

All statistical procedures were carried out using the **Statistical Package for Social Scientists (SPSS 15.0)**. Descriptive statistics were used to summarize means of perceptions and expectations, demographic profile, overall broadband internet service quality and institutional customer satisfaction. Perception minus expectation gap scores per attribute and dimensions were calculated and interpreted. Additionally, scale reliability analysis and correlation were used to compute the internal consistency of each statement & the relationship among dimensions as well as customer satisfaction.

4.1.1 Demographic characteristics of respondents.

Perceptual judgments cannot be free of emotion. As a reason and experience do affect perception of customer so does their emotion. Generally, customers with low experience in using broadband internet services tend to be aggressive but as they have more experience in the service, they tend to be more logical in their judgments even if, they are measuring their actual feelings regarding the service. But, service year is not the only factor affecting the level of emotion free judgment. There are other factors, such as the type of business they are engaged in, the speed of the internet service they purchased and the purpose of the internet service are additional factors in determining the level of emotion of the customers. In development psychology, experience has been recognized as one of the most important factor affecting judgment and hence, the researcher looked at experience of broadband internet service distribution of respondents and is presented in Table 1 below.

Table 2: Demographic Characteristics of Respondents

Demographic Characteristics	Frequency/no. of respondents	Percentage
For how long have you been a customer in broadband internet service?		
less than 1 year	14	10.8
1 to less than 2 years	25	19.4
2 to less than 4 years	42	32.6
More than 4 years	<u>48</u>	<u>37.2</u>
Total	129	100
In what kind of business are you currently engaged in?		
Big & small org.	61	47.3
Government org.	32	24.8
International org.	<u>36</u>	<u>27.9</u>
Total	129	100
Which internet speed did you subscribe from ETC currently?		
64	4	3.1
128	20	15.5
256	25	19.4
512	39	30.2
1024	18	14.0
2048 & above	<u>23</u>	<u>17.8</u>
Total	129	100
For what purpose are you using the internet currently?		
for business/trading	60	46.5
Official communication	56	43.4
Personal communication	6	4.7
Others	<u>7</u>	<u>5.4</u>
Total	129	100

Source: Questionnaire and SPSS result

As shown in Table 1, 10.8% of the respondents have an experience in broadband internet service which is less than one year, 19.4% of the respondents have 1 to 2 years of experience, 32.6% of them have between 2 to 4 years of experience and the rest of the respondents, 37.2% have more than 4 years experience in using the broadband internet services indicating majority of the respondents have an experience of more than 4 years in the broadband internet services. This enables the researcher in addressing the study through obtaining genuine information from their experiences.

Regarding the type of business of the respondents, the majority (47.3%) of the respondents were reported with big and small organizations, followed by an international organizations (27.9%) and Government organization accounts (24.8%) of the respondents.

As shown in table 1, 30.2% of the respondents are subscribers of broadband internet with the speed of 512kilo bits, 19.4% of the respondents are subscribers of the broadband internet with the speed of 256kilo bits / second and 17.8% of them are using a broadband internet service with the speed of 2048 and above kilo bit / second. In addition to this, 15.5% of them subscribed a broadband internet service with the speed of 128kilo bits & 14% of the respondents subscribed with the speed of 1024kilo bits. As per the data collected, the minimum speed is 64kilo bits / second which have been used by 3.1% of the respondents.

On the part of the purpose of internet, the majorities, 46.5% of the respondents use the internet for business or trade purpose, 43.4% of them used it for official communication and only 4.7% of the respondents are using it for personal purposes. The rest 5.4% use it for other purposes like, providing free internet service for the public, data download, health care training and other programs.

4.1.2. Reliability Analysis

In this study, Cronbach coefficient alpha were used to assess the internal consistency of each dimensions used in the study while discriminate validity assessment was carried out using correlation analysis. The reliability as assessed by coefficient alpha was found to be 0.953 as shown in table 2 indicating the acceptability of the scale for further analysis.

As shown below, the internal consistencies of each scale is quite high. The Cronbach alpha coefficient range from 0.854 to 0.917, which is higher than the *Cut-off criteria*. By convention, a lenient cut-off of 0.60 is common in exploratory research; alpha should be at least 0.70 or higher to retain an item in an "adequate" scale; and many researchers require a cut-off of 0.80 for a "good scale. Specifically, (Nunnally, 1978) suggests that scales with 0.70 Alpha coefficients and above are considered acceptable. From the result as shown in table 2, the alpha coefficient reliability scale is greater than 0.80 which is a good scale. Whereas, the service price dimension internal reliability scale is 0.549 which is below the minimum cut-off criteria 0.60 indicating that the contribution of the dimension is insignificant.

The statistics of "alpha if item deleted" is the cronbach coefficient for the rest of the scale, after the corresponding item is excluded from the construct. The "alpha if item is deleted" should increase if a larger value item is deleted. For example, in the service price dimension as per the responses obtained, if the item service price you pay for the service received is deleted, the reliability of the dimension will increase from 0.549 to 0.743. In addition, in the assurance dimension, the item ETC in having free call numbers, brochures & websites is deleted, with the remaining four items, the reliability of the dimension automatically will increase from 0.902 to 0.923. However, in this study, the rest of all items were used for further analysis.

Table 3: Scale Reliability Analysis

Dimensions	Reliability coefficients (alphas)		
	no. of Items	Alpha of coefficients for dimension	Alpha of coefficients if item deleted
Quality of network	5	0.864	0.843 0.825 0.833 0.853 0.824
Service price	3	0.549	0.743 0.123 0.410
Reliability	6	0.860	0.851 0.824 0.833 0.840 0.828 0.844
Responsiveness	4	0.913	0.899 0.882 0.884 0.885
Assurance	5	0.902	0.870 0.869 0.859 0.878 0.923
Empathy	3	0.898	0.861 0.809 0.890
Tangibility	4	0.854	0.814 0.803 0.801 0.838
After sale service	5	0.917	0.915 0.883 0.910 0.898 0.886
Reliability of linear combination (Total scale reliability)		0.953	

Source: Questionnaires & SPSS scale analysis output.

4.1.3. Perceptions, expectations and gap scores

The higher the perception (P) minus expectation (E) scores, the higher is the level of perceived service quality (SQ) or maintains customer satisfaction (CS). The (P-E) frame work suggests the highest service quality score for an attribute occurs when expectation score is 1 and perception score is 7, giving a service quality or customer satisfaction level score is 6 (7-1). If a perception falls short of expectation, service quality will be a minus score. The bigger the minus score, the worse the company's service quality and results in customer dissatisfaction. The lowest service quality is the one in which the expectation score is 7 and the perception score is 1 provided that a service quality score is -6(1-7). Therefore, levels of quality increase as scores move from -6 to 6 (Al-Saggaf and Jannadi, Pp954-955).

On the basis of the data collected, the mean values of perception, expectation and gap scores (service quality or customer satisfaction level) were computed for each statement (Table 3).

As shown in the table below, the range for perception on each item is from a low of 2.00 to a high of 4.89 on a 7 point likert scale. It is further revealed that on average, ETC performed best in service price dimension (4.75) and the poorest performance in the quality of network dimension (2.60). In broadband internet service provision, ETC performed well in the following attributes or statements: The service price ETC charges (4.78), the issuance of bill according to the schedule per month (4.89) and the understandability & clarity of the bill (4.60). The service price attributes having the perception mean values are above average on the 7 point scale. In opposite to these, ETC performed the poorest service in the following attributes, the ability to download large amount of data (2.00), the ease of accessibility during peak hours (2.43), having free call numbers, brochures & web sites for customers problem clarifications (2.48), the ability to access all internet services without any restriction (2.50), the consistency of speed ETC provides (2.57), the speed of broadband internet service (2.71) and the customers' complaint handling process (2.84). This indicates that ETC should give more attention to improve the services it provides to the customers.

Table 4: Perception, Expectation and gap scores for each statement & dimension

Customer satisfaction/service quality dimensions	Mean (P)	Mean (E)	CS(P-E)
Dimension 1: Quality of network	2.60	5.81	-3.21
1. The speed of broadband internet service provided by ETC.	2.71	5.97	-3.26
2. The consistency of speed ETC provides.	2.57	5.82	-3.25
3. The ease of accessibility during peak hours.	2.43	5.33	-2.90
4. Availability of 24 hours internet connection.	3.30	5.97	-2.67
5. The ability to download large amount of data.	2.00	5.98	-3.98
Dimension 2: Service price	4.75	4.77	-0.02
6. The service price you pay for the service you receive.	4.78	4.19	0.59
7. The issuance of bill according to the schedule per month.	4.89	5.11	-0.22
8. The understandability and clarity of the bill.	4.60	5.03	-0.43
Dimension 3: Reliability	3.04	5.51	-2.47
9. The service providers' in performing according to declaration.	3.04	5.57	-2.53
10. ETC's capability in solving your problem in sincere interest.	3.05	5.66	-2.61
11. ETC's provision of service at the time it promises to do so.	2.82	5.53	-2.71
12. ETC's accuracy in keeping its records.	3.84	5.20	-1.36
13. ETC's dependability in handling your problems.	3.03	5.38	-2.35
14. The ability to access all internet services without restriction.	2.50	5.74	-3.24
Dimension 4: Responsiveness	3.18	5.58	-2.40
15. In telling the customers exactly when the service will be performed.	3.15	5.50	-2.35
16. ETC employees in giving prompt service to customers.	2.90	5.73	-2.83
17. ETC employees' willingness to help customers.	3.54	5.53	-1.99
18. ETC employees readiness in respond to your request promptly.	3.11	5.57	-2.46
Dimension 5: Assurance	3.13	5.55	-2.42
19. Knowledge in answering your question with respect to the service.	3.45	5.65	-2.20
20. ETC employees in making you feel safe in your transaction.	3.10	5.60	-2.50
21. ETC employees being courtesy consistently.	3.34	5.31	-1.97
22. ETC employees in instilling confidence in you (customers).	3.28	5.46	-2.18
23. ETC having free call numbers, brochures and websites for customers.	2.48	5.75	-3.27

Dimension 6: Empathy	3.28	5.47	-2.19
24. ETC Employees in dealing with customers' in a caring fashion.	3.31	5.46	-2.15
25. ETC Employees in understanding the needs of customers.	3.26	5.60	-2.34
26. ETC Employees in giving customers individual attention.	3.27	5.36	-2.09
Dimension 7: Tangibility	3.74	5.49	-1.75
27. The service provider's in using Up-to-date equipment.	3.03	5.72	-2.69
28. The attractiveness of physical facilities of ETC.	3.38	5.38	-2.00
29. ETC employees dressing and appearance.	3.96	5.24	-1.28
30. ETC in having sufficient offices in different geographic areas.	4.57	5.65	-1.08
Dimension 8: After sales service	2.99	5.74	-2.75
31. The customers' complaint handling process.	2.84	5.84	-3.00
32. The problem solving techniques regarding to the service.	3.09	5.69	-2.60
33. The time taken to solve the problem.	2.56	5.91	-3.35
34. The employees' technical knowledge in solving your problem.	3.39	5.64	-2.25
35. The employees' ability to serve you well and maintain service quality.	3.09	5.64	-2.55

Source: Respondents response and SPSS out put

Likewise, the range for expectations scores for statements is from a low of 5.20 to a high of 5.97. Respondents also have the greatest mean expectation value for quality of network dimensions (5.81), followed by after sales service dimension (5.74), Responsiveness (5.58), Assurance (5.55) and Reliability (5.51). The lowest mean expectations are registered in service price (4.77) and empathy (5.47).

Respondents also have the highest expectation for the attributes such as the ability to download large amount of data (5.98), the speed of broadband internet service (5.97) and with the same mean expectation value availability of 24 hours internet connection (5.97). On the contrary, respondents have the lowest expectations in the following attributes such as, the service price (4.19), the understandability and clarity of the bill (5.03), the issuance of bill according to the schedule per month (5.11), ETC's accuracy in keeping records (5.20), and employee's dressing and appearance (5.24).

Parasuraman et al. 1994: (cited by Silvestro 2005, pp 218) suggested that the gap analysis is accurate in identifying service shortfalls/ underperformance in an operation. Addressing these identified shortfalls is the foundation for planning strategies to ensure customer experiences that are consistent with their expectation and thus increasing the probability of satisfaction. The finding indicates that in general, institutional customers' perception or actual service of broadband internet services provided by ETC do not meet their expectations except the service price ETC charged. This is evidenced by all the perception minus expectation gap scores being negative ranging from -0.22 for the issuance of bill according to the schedule per month to -3.98 for the ability to download large amount of data.

As it can be seen from the above table that narrow gaps were found with the dimension as the service price charged by ETC for the broadband internet service (-0.02) and the attributes- ETC in having sufficient offices in different geographic areas (-1.08), employees dressing and appearance (-1.28), ETC's accuracy in keeping records (-1.36), employees being courtesy consistently (-1.97), employees willingness to help customers (-1.99), the attractiveness of physical facilities (-2.00), employees in giving customers individual attention (-2.09), employees in instilling trust in customers (-2.18) and employees knowledge & skill in answering customers' request (-2.20). This suggests that, these eight attributes are the strongest points of ETC's broadband internet service quality relatively as compared to others attributes.

On the whole, the largest mean gaps were found for the quality of network aspect (-3.21), after sales service (-2.75) and reliability (-2.47) dimensions. From these, ETC should give more emphasis on these shortfalls and improving the attributes under each dimension. On the other hand, the least mean gaps are calculated with service price (-0.02), tangibility (-1.75) and empathy (-2.19) dimensions.

Table 5: Perception, Expectation and gap scores based on each types of organization

Respondents type of organization	International organization			Big and small organization			Government organization		
	Mean (P)	Mean (E)	Gap scores	Mean (P)	Mean (E)	Gap scores	Mean (P)	Mean (E)	Gap scores
Means value of perception and expectation									
QUALITY OF NETWORK	2.27	5.91	-3.64	2.68	5.84	-3.16	2.83	5.66	-2.83
The speed of broadband internet service provided by ETC.	2.22	5.89	-3.67	2.84	6.07	-3.23	3.03	5.88	-2.85
The consistency of speed ETC provides.	2.14	5.89	-3.75	2.77	5.93	-3.16	2.66	5.53	-2.87
The ease of accessibility during peak hours.	2.14	5.42	-3.28	2.62	5.43	-2.81	2.41	5.03	-2.62
Availability of 24 hours internet connection	2.97	6.14	-3.17	3.28	5.89	-2.61	3.72	5.94	-2.22
The ability to download large amount of data	1.92	6.19	-4.27	1.89	5.89	-4.00	2.31	5.91	-3.60
SERVICE PRICE	4.78	4.81	-0.03	4.81	4.65	0.16	4.61	4.97	-0.36
The service price you pay for the service you receive	4.61	4.11	0.5	4.89	4.00	0.89	4.75	4.66	0.09
The issuance of bill according to the schedule per month	4.97	5.25	-0.28	4.84	5.03	-0.19	4.91	5.09	-0.18
The understandability and clarity of the bill	4.78	5.08	-0.3	4.72	4.93	-0.21	4.19	5.16	-0.97
RELIABILITY	2.65	5.44	-2.79	3.18	5.51	-2.33	3.26	5.61	-2.35
The service providers' in performing according to promises and declaration	2.56	5.47	-2.91	3.28	5.66	-2.34	3.13	5.53	-2.40
ETC's capability in solving your problem with sincere interest.	2.75	5.67	-2.92	3.11	5.64	-2.53	3.28	5.69	-2.41
ETC's provision of service at the time it promises to do so (providing services at the promised time).	2.50	5.33	-2.83	2.97	5.54	-2.57	2.91	5.75	-2.84
ETC's accuracy in keeping its records.	3.50	5.06	-1.56	4.08	5.16	-1.08	3.78	5.44	-1.66
ETC's dependability in handling your problems.	2.64	5.36	-2.72	3.13	5.39	-2.26	3.28	5.38	-2.10
The ability to access all internet services without any restriction.	1.92	5.72	-3.80	2.48	5.67	-3.19	3.19	5.88	-2.69
RESPONSIVENESS	2.83	5.47	-2.64	3.25	5.59	-2.34	3.43	5.68	-2.25
ETC in telling the customers exactly when the service will be performed.	2.78	5.36	-2.58	3.30	5.46	-2.16	3.28	5.75	-2.47
ETC employees in giving prompt service to customers.	2.53	5.69	-3.16	3.02	5.74	-2.72	3.09	5.75	-2.66
ETC employees willingness to help customers	3.28	5.42	-2.14	3.51	5.56	-2.05	3.91	5.59	-1.68
ETC employees readiness in respond to your request	2.72	5.39	-2.67	3.16	5.62	-2.46	3.44	5.66	-2.22

promptly.									
ASSURANCE	2.77	5.34	-2.57	3.26	5.61	-2.35	3.28	5.66	-2.38
ETC employees' knowledge & skill in answering your question with respect to the service.	2.92	5.44	-2.52	3.54	5.67	-2.13	3.88	5.84	-1.96
ETC employees in making you feel safe in your transaction.	2.81	5.44	-2.63	3.13	5.66	-2.53	3.38	5.66	-2.28
ETC employees being courtesy consistently.	2.89	5.08	-2.19	3.59	5.34	-1.75	3.38	5.50	-2.12
ETC employees in instilling confidence in you (customers).	2.89	5.19	-2.30	3.52	5.56	-2.04	3.25	5.56	-2.31
ETC in having free call numbers, brochures and websites for customers for clarification of your problems & request.	2.36	5.56	-3.20	2.52	5.85	-3.33	2.53	5.78	-3.25
EMPATHY	3.02	5.35	-2.33	3.42	5.49	-2.07	3.30	5.57	-2.27
ETC Employees in dealing with customers' in a caring fashion.	3.11	5.36	-2.25	3.43	5.49	-2.06	3.31	5.50	-2.19
ETC Employees in understanding the needs of customers.	3.00	5.50	-2.50	3.38	5.64	-2.26	3.34	5.63	-2.29
ETC Employees in giving customers individual attention.	2.97	5.19	-2.22	3.45	5.34	-1.89	3.25	5.59	-2.34
TANGIBILITY	3.53	5.41	-1.88	3.82	5.54	-1.72	3.79	5.51	-1.72
The service provider's in using Up-to-date equipment.	2.72	5.72	-3.00	3.16	5.72	-2.56	3.13	5.72	-2.59
The attractiveness of physical facilities of ETC.	3.19	5.25	-2.06	3.39	5.44	-2.05	3.56	5.41	-1.85
ETC employees dressing and appearance.	3.72	5.00	-1.28	4.11	5.31	-1.20	3.94	5.38	-1.44
ETC in having sufficient offices in different geographic areas.	4.50	5.67	-1.17	4.62	5.70	-1.08	4.53	5.53	-1.00
AFTER SALES SERVICE	2.60	5.50	-2.90	3.11	5.90	-2.79	3.21	5.72	-2.51
The customers' complaint handling process.	2.53	5.75	-3.22	2.93	5.95	-3.02	3.00	5.72	-2.72
The problem solving techniques regarding to the service.	2.53	5.39	-2.86	3.34	5.85	-2.51	3.22	5.72	-2.50
The time taken to solve the problem.	2.28	5.61	-3.33	2.57	6.10	-3.53	2.84	5.88	-3.04
The employee's technical knowledge in solving your problem.	2.81	5.39	-2.58	3.59	5.75	-2.16	3.66	5.72	-2.06
The employee's ability to serve you well and maintain service quality.	2.86	5.36	-2.50	3.10	5.84	-2.74	3.34	5.59	-2.25

Source: Questionnaire & SPSS out put

The computation for the mean of expectation, perception and its gap score vary based on the type of business they are engaged in, it shows that international organization's expectation is more than others. As it can be seen from the above table, high gap scores for international organization were registered in quality of network (-3.64), after sale service (-2.90) and reliability (-2.79) dimensions. High gap scores for big and small organization were computed also in quality of network (-3.16), after sale service (-2.79) and assurance (-2.35) dimensions. Similarly, for government organization high gap scores are resulted in the same dimensions quality of network (-2.83), after sale service (-2.51) and assurance (-2.38).

In the same fashion, as shown in the above table, small gap scores are obtained in the dimensions of service price (-0.03), tangibility (-1.88) and empathy (-2.33) for international organization respondents. In the big and small organization respondents, small gap scores are computed in the dimensions of tangibility (-1.72), empathy (-2.07) and reliability (-2.33). Whereas, in the service price dimension, the respondents are satisfied i.e. their perception on the actual service is greater than their expectations ($P-E = 4.81 - 4.65 = 0.16$). When we come to government organizations, small gap scores are registered in the dimensions of service price (-0.36), tangibility (-1.72) and responsiveness (-2.25). From these, we can understand that when the gap scores between the customer's perception and expectation are small as compared to the given dimensions, relatively, ETC has performed well. Moreover, from the above table, one can deduce that the expectation of international organization respondents were much more than the expectation of big and small organizations as well as government organizations.

4.1.4. Overall broadband internet service quality and customer satisfaction

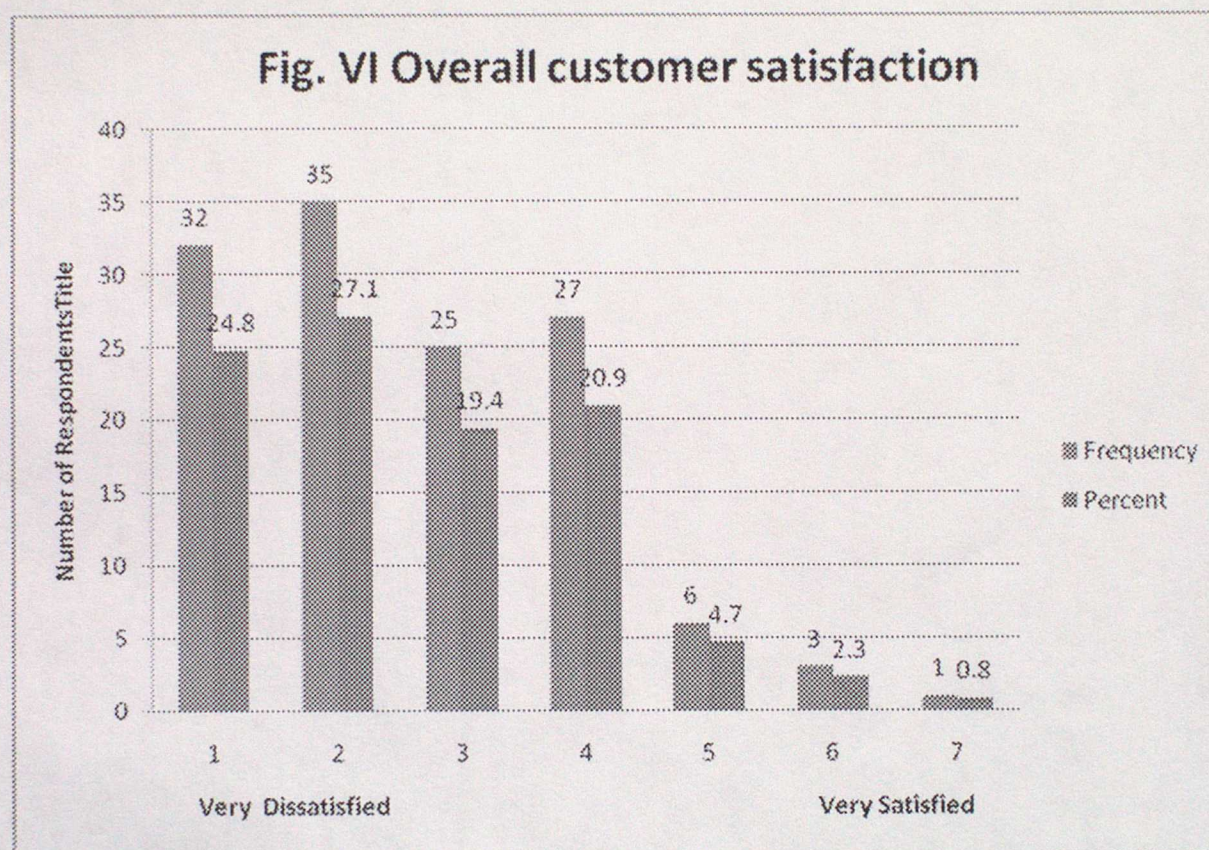
With 7 point likert scale (1 mean very poor and 7 mean very good), respondents were asked to rate the overall broadband internet service quality provided by ETC. Descriptive statistics were used to determine the overall broadband internet service quality. Accordingly, as shown in the figure, no respondents reported to rate "the service quality" as very good. While, 23.3% of the respondents said that the overall broadband internet service quality provided by ETC is very poor. In general, 15.5% of them claimed an average rating of four, a little over half (53.5%) of the respondents rated it as "poor" & "intends to poor" (below average) and the remaining of the respondent answered the overall broadband internet service quality as "good" (2.3%) & "intends to good" (5.4%) above average. The detailed information is presented below in the table and pie chart for further clarifications.

Table 6: How do you evaluate the overall quality of broadband internet service provided by ETC?

Overall service quality of broadband internet service	Frequency	Percent	Cumulative Percent
1- very poor	30	23.3	23.3
2- poor	39	30.2	53.5
3- intends to poor	30	23.3	76.7
4- medium	20	15.5	92.2
5- intends to good	7	5.4	97.7
6- good	3	2.3	
7- very good	0	0	100.0
Total	129	100.0	

Source: Questionnaires and SPSS Descriptive statistics.

Similarly, respondents were requested to rate their overall level of satisfaction with the broadband internet service provided by ETC. The results of the descriptive data analysis shown in figure VI indicates that 24.8% of the respondents reported that they are highly dissatisfied and only 0.8% found as highly satisfied with the broadband internet services. Overall, about 20.9% of the respondent rated their level of satisfaction as average (four). While, the remaining 71.3% and 7.8% of the respondents replied their overall level of satisfaction with the broadband internet services below and above average respectively.



Source: Respondents Response and SPSS Descriptive statistics.

4.1.5. Correlation of service quality dimension with overall customer satisfaction (OCS) and service quality (OSQ)

The degree or strength of the relationship between two variables is expressed by the coefficient of correlation. Whether positive or negative, the more the coefficient is the stronger or closer the relationship between two variables. Correlation coefficients take on values between -1 and +1 ranging from being negatively correlated (-1), uncorrelated (0) to positively correlated (+1). The sign of the correlation coefficient (i.e. positive or negative) defines the direction of the relationship. The absolute value indicates the strength of the correlation. Correlation analysis helps to gain insight in to the strength of the relationship between variables. Undertaking correlation before conducting the regression analysis is an essential step in developing a model using regression (Croft 1983, p. 221.)

Regarding, the direction of the correlation one may find the two variables correlated in either positive or negative direction. The direction of the correlation is independent of the size of the correlation, and both have nothing to do with each other. Positive correlations indicate that increase or decrease in one variable tends to accompany the increase or decrease in another variable. Whereas, negative correlation indicates that increase in one variable tends to decrease in another variable, and vice versa.

In this research paper, the result of Pearson correlation coefficient indicates that positive in the majority of dimensions and negative relationship with service price dimension exists between each dimension and overall satisfaction as well as overall service quality of broadband internet service. In addition to this, the service price dimension contribution is found to be insignificant for the study.

Table 6 presents the summary of the correlation analysis in matrix form; however, the details are given in Annex III

As shown in the table below, the magnitude of correlation found between overall customer satisfaction and service quality is very high (0.832). This indicates that there is very strong relationship between them and which is higher than the dimensions of customer satisfaction

stated in this research. It may thus be assumed that overall service quality could be a good predictor of customer satisfaction, and better than the whole stated dimensions. While significantly higher coefficient values among all predictor variables show dependability up on each other and can be used to predict the values of each other.

Table 7: Summary of correlation coefficient

	OCS	OSQ	QNW	SP	REL	RES	ASS	EMP	TAN	AFT
OCS	1.000									
OSQ	0.832**	1.000								
QNW	0.612**	0.548**	1.000							
SP	-0.152	-0.081	-0.108	1.000						
REL	0.423**	0.441**	0.635**	0.058	1.000					
RES	0.354**	0.361**	0.419**	-0.029	0.698**	1.000				
ASS	0.398**	0.407**	0.588**	0.045	0.781**	0.723**	1.000			
EMP	0.196*	0.253**	0.306**	-0.038	0.686**	0.757**	0.723**	1.000		
TAN	0.228**	0.300**	0.398**	0.056	0.538**	0.528**	0.623**	0.525**	1.000	
AFT	0.573**	0.542**	0.613**	-0.101	0.736**	0.691**	0.737**	0.577**	0.556**	1.000

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

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

Note: number of cases is 129

OCS-Overall customer satisfaction

REL-Reliability

TAN-Tangibility

OSQ-Overall service quality

RES-Responsiveness

AFT-After sale service

QNW-Quality of network

ASS-Assurance

SP-Service price

EMP-Empathy

Likewise, the magnitude of relationship between the eight dimensions and overall customer satisfaction ranges from 0.196 which is low (between empathy and overall customer satisfaction) to 0.612 which is high (between quality of network and overall customer satisfaction). Similarly, the magnitude of relationship ranges from a low of 0.253 (between empathy and overall service quality of broadband internet service) to a high of 0.548 (between quality of network and overall service quality). With the exception of service price, all dimensions have positive correlation with statistical significance for customer satisfaction and service quality of broadband internet and this shows that there is a linear relationship between variables i.e. if ETC improves the dimensions' quality, automatically customer satisfaction and service quality will increase.

The statistical significance i.e. P-value is higher than the minimum cut of 0.05 in the majority of the dimensions except empathy relationship with customer satisfaction that is exactly the same with p-value 0.05, which shows the degree of association as highly significant. However, there is no significant relationship between the service price dimensions with the rest of the dimensions.

4.1.6. Modeling Overall Customer Satisfaction and Service Quality

Linear regression is used to model the value of a dependent scale variable based on its linear relationships to one or more predictors. By using the gap scores of the eight modified SERVQUAL dimensions namely, quality of network, service price, reliability, responsiveness, assurance, empathy, tangibility and after sale service as independent variables (predictors), and overall customer satisfaction and service quality as dependent variables, multiple regression analyses were carried out to model overall customer satisfaction and service quality using stepwise method.

The problems related to multicollinearity (when predictor variables are so highly correlated with each other) can be assessed through different statistical techniques. One way to assess the possibility of multicollinearity among predictor variables is to perform correlations. If a correlation coefficient matrix demonstrates correlations of .75 or higher among variables, there may be multicollinearity. Other statisticians suggest that correlations of .90 or greater may indicate multicollinearity. As shown in table 6 above, the correlation coefficient between assurance and reliability is higher (0.781) followed by the correlation coefficient between empathy and responsiveness (0.757). Considering the above problems of collinearity, the regression analysis was made using the stepwise method of model selection. This was applied in order to include only the most important variables in the model.

Table 7 shows the summary of the regression results for overall customer satisfaction of broadband internet institutional customers' (see annex VI for details).

The stepwise linear regression analysis resulted in three alternative models for overall customer satisfaction of broadband internet users' as shown below. In the first model, the regression analysis excluded the remaining seven dimensions namely service price, reliability,

responsiveness, assurance, empathy, tangible, and after sale service by considering insignificant value ($P>0.05$). This model is statistically highly significant with adjusted R^2 of 0.369 indicating that the quality of network dimension explains 36.90% of the variation in overall satisfaction of broadband internet users. None of the other elements of the modified SERVQUAL model found to be significant in predicting overall customer satisfaction. Accordingly the regression equation for the first alternate model can be described as follows:

$$\text{Overall customer satisfaction} = 4.768 + 0.664 \text{Quality of network.}$$

Table 8: Summary of Stepwise Regression for Dimensions Significant in Predicting Overall Customer satisfaction

Model	Independent variables	B	Std. Error	Beta	t-value	Sig
1	(Constant)	4.768	0.263		18.153	.000
	Quality of network	0.664	0.076	0.612	8.718	.000
2	(Constant)	4.928	0.254		19.422	.000
	Quality of network	0.453	0.092	0.417	4.935	.000
	After sale service	0.304	0.081	0.317	3.749	.000
3	(Constant)	4.802	0.257		18.680	.000
	Quality of network	0.441	0.091	0.406	4.853	.000
	After sale service	0.405	0.093	0.422	4.363	.000
	Empathy	-0.166	0.078	-0.172	-2.142	.034

$R^2=0.374$, Adjusted $R^2=0.369$, $F\text{-value}=75.999^*$ (model 1)

$R^2=0.437$, Adjusted $R^2=0.428$, $F\text{-value}=48.931^*$ (model 2)

$R^2=0.457$, Adjusted $R^2=0.444$, $F\text{-value}=35.078^*$ (model 3)

* $P<0.001$

On the other hand, the second alternative model for overall customer satisfaction considered quality of network and after sale service as a predictor to overall customer satisfaction and reported high level of significance ($p<0.001$). Adjusted R^2 value of 0.428 indicates that 42.80% of the variation in overall satisfaction of institutional customer is explained by the model. The two dimension found to be significantly ($p<0.001$) related to overall customer satisfaction. In line with individual dimension's contribution, quality of network has more contribution (0.453) than after sale service (0.304) in showing customer satisfaction.

The regression equation for the second alternative model can be represented as:

$$\text{Overall customer satisfaction} = 4.928 + 0.453 \text{Quality of network} + 0.304 \text{After sale service}$$

Finally, the third optional model for overall customer satisfaction considered three dimensions such as quality of network, after sale service and empathy as a predictor to overall customer satisfaction and reported high level of significance ($p < 0.001$, $p < 0.05$). Adjusted R^2 value of 0.444 indicates that 44.40% of the variation in overall customer satisfaction of institutional customer is explained by the third model in the broadband internet service. With regard to the individual dimensions, quality of network & after sale service found to be significantly high ($p < 0.001$) related to overall customer satisfaction along with empathy significant at ($p < 0.05$). Thus the results of the analysis suggest that institutional customers of broadband internet service of ETC were considered quality of network, after sale service and empathy quality dimensions to assess their overall customer satisfaction on broadband internet services. Therefore, the regression equation for the third alternative model is:

$$\text{Overall CS} = 4.802 + 0.441 \text{Quality of network} + 0.405 \text{After sale service} - 0.166 \text{empathy}.$$

All in all, based on the analysis, institutional customers of broadband internet service of ETC use quality of network, after sale service and empathy dimensions for assessing their overall level of satisfaction with broadband internet services.

Similarly, the stepwise regression analysis of the eight modified SERVQUAL dimensions or customer satisfaction dimensions as independent variables and overall broadband internet service quality as a dependent variable resulted in two alternate models. Model summary is presented below in table 8 (for details see annex V).

The first alternative model for overall service quality of broadband internet service is found as significant ($p < 0.001$) with adjusted R^2 value of 0.295 indicating that 29.50% of the variation in the service quality of broadband internet is explained by quality of network dimension. The rest of the modified SERVQUAL dimensions were excluded from the model due to insignificant p-values. Hence, the regression equation for this model is:

$$\text{Overall service quality} = 4.353 + 0.557 \text{Quality of network}.$$

Table 9: Summary of Stepwise Regression for Dimensions Significant in Predicting Overall Broadband internet service quality

Models	Independent variables	B	Std. Error	Beta	t-value	Sig
1	(Constant)	4.353	0.260		16.767	.000
	Quality of network	0.557	0.075	0.548	7.392	.000
2	(Constant)	4.508	0.251		17.944	.000
	Quality of network	0.352	0.091	0.346	3.866	.000
	After sale service	0.296	0.080	0.330	3.680	.000
<i>R²=0.301, Adjusted R²=0.295, F=54.642* (model 1)</i>						
<i>R²=0.369, Adjusted R²=0.359, F=36.789* (model 2)</i>						
<i>* P<0.001</i>						

On the opposite, the second model incorporated two dimensions to predict overall service quality i.e. quality of network and after sale service. Also, the model found to be statistically significant ($p<0.001$) with adjusted R^2 value of 0.359 implying that 35.90% of the variation in overall service quality of broadband internet is explained by the above two variables. With respect to individual dimensions, quality of network has greater contribution (.352) than after sale service (.296) in predicting overall quality of broadband internet service. However, both quality of network and after sale service maintained high level of significance ($p<0.001$). This further suggests that quality of network is a key determinant for both overall customer satisfaction and service quality. Therefore, the second alternative model for service quality can be expressed as: Overall Service quality = 4.508 + 0.352quality of network + 0.296After sale service.

In short, based on the analysis, broadband internet users of ETC use quality of network and after sale service dimensions for assessing overall service quality of broadband internet services.

4.2. Discussion

The central idea in this research is that superior service quality and customer satisfaction in the service sector is facilitated by the knowledge about customers' perceptions and expectations of the quality of service being provided. Though service quality measures have been developed and widely tested for different consumer services, it is not widely known whether these measures possess sound psychometric properties when applied in telecommunications and particularly in broadband internet services. However, which quality aspects significantly affect overall satisfaction; service quality, and the quality gaps existed are critical concerns in this dynamic service sector. To address these issues, the study presents an application of the modified SERVQUAL as a measure of service quality and customer satisfaction in broadband internet services.

The analysis performed in terms of perception statements indicated that, ETC has performed well in terms of having sufficient offices in different geographic areas, ETC employees dressing & appearance, ETC's accuracy in keeping its records, ETC employees willingness to help customers, the service price you pay for the service you receive, the issuance of bill according to the schedule per month, and the understandability & clarity of the bill.

The mean values of these strong points of ETC's broadband internet service quality are all above the midpoint 3.5 (average) in a seven point Likert scale. However, the rest of the twenty-eight items scored below average. Particularly, two statements under quality of network aspect received extremely low score from service provider i.e. the ability to download large amount of data (2.00) and the ease of accessibility during peak hours (2.43). In addition, the analysis of the data shows that broadband internet institutional customers of ETC perceived the statements having free call numbers, brochures & websites for customers for clarification their problem & request (2.48), the ability to access all internet services without restriction (2.50), the time taken to solve the problem (2.56), the consistency of speed ETC provides (2.57), the speed of broadband internet service provided by ETC (2.71), provision of service at the time it promises to do so (2.82), customers' complaint handling process (2.84), and ETC employees in giving prompt service to customers (2.90) are the next lower performances with mean perceived value. This shows that performance in terms of quality criteria associated with quality of network

aspect is very low and needs particular attention from ETC to bring closer to customers' expectations.

With regard to expectation of customers on broadband internet service from the service provider, all mean scores are above five with the exception of the statement "the service price you pay for the service you receive" (4.19). However, it can easily be met as the corresponding perception score for this item which is greater than the expectation value i.e. 4.78 for perception.

Perceptions minus expectations scores of the eight dimensions with 35 items are all negative. Though respondents' rating of the highest point in the scale for their expectations; which resulted in negative gap scores, is one of the weaknesses of SERVQUAL model, it is possible to have a narrow gap between perceptions and expectations for firms that work for excellence. Surprisingly, the wider gap corresponds to those items that received the lowest performance score e.g. the items of quality of network dimensions i.e. in the speed of broadband internet, consistency of speed and the ability to download large amount of data. The mean gap scores of these service quality items are very much near to the midpoint of the measurement scale representing poor service quality. Likewise, narrow gap scores appeared corresponding to those items that received higher perception ratings.

Mean scores of the customer satisfaction dimensions or modified SERVQUAL dimensions were obtained by summing the mean scores of each statement and dividing by the number of items in each dimension by using SPSS program. Since the corporation is strong with respect to the three items of the service price dimension relative to the rest of the items in other SERVQUAL dimensions, the mean gap score was found minimum.

The second minimum service gap is attributed to tangible dimension. All the four items of the tangible dimension had a gap score of below three. The lowest gap score of all items is for having sufficient offices in different geographic areas, which is under the tangible dimension. The reason may be that subscribers have got nearby office services from their working places. The third narrow gap existed for empathy followed by responsiveness, assurance, reliability, and after sale service and finally the highest gap is existed in quality of network dimension. This shows that at least narrow the service quality gap between customer expectation and perception.

There is a need to bring substantial improvement in the quality of network and after sale service aspects with great emphasis of customer satisfaction dimensions since the service quality gap of them is wider than the other dimensions.

With respect to the type of business organization, high gap scores were registered in the dimension of quality of network, after sale service and reliability in the international organization. In the big and small organization high gap score is obtained in the dimension quality of network, after sale service and assurance. In the same way, in the government organization high gap score is claimed in the quality of network, after sale service and assurance dimensions. From these we can conclude that both type of organizations have the same intention of focusing on the quality of network and after sale service dimensions but they are differ in the third higher gap score for them i.e. reliability dimension for institutional, assurance dimension for both government and big & small organization.

The minimum gap score is shown in the service price and tangibility dimension for both types of organizations but in the big and small organization the gap score for service price is positive and negligible gap score for international and government organization. The reason may be that organizational subscribers do not give much value for the service price as organization rather they give more value for other services like quality of network, after sale service and reliability.

The results of the regression analysis in the first model revealed that quality of network and after sale service dimensions are the critical determinants of the overall customer satisfaction on broadband internet service provided by ETC. This means that broadband internet users of ETC use these service quality dimensions in the assessment of their level of satisfaction. Satisfaction has to do with an affective state and an emotional reaction. Such a conceptualization promotes satisfaction as more feeling oriented than perceived quality and it seems logical that empathy is the third more affective evaluative component for overall customer satisfaction. Empathy by definition is the caring component of SERVQUAL, with items focusing on individual interests, attention and understanding. Thus, feelings of satisfaction are influenced by more affective components in addition to quality of network and after sale service.

In this study, quality of network emerged as the most critical determinant of both customer satisfaction as well as service quality. In addition, after sale service-having the second highest service gap- is the other critical determinants of overall satisfaction and service quality.

The significance of the **quality of network & after sale service** as predictors across both dependent variables seems to strengthen the relationship between service quality and satisfaction. That is, for both dependent variables the same predictors (quality of network & after sale service) were found as significant in both the models, indicating that both dependent variables are influenced by the same dimension in addition to other variables like empathy for overall satisfaction.

More importantly, after sale service dimension included in the modified SERVQUAL model found to be the second best predictor of customer satisfaction. That is customer satisfaction associated with customer complaint handling process, the time taken to solve the problem, the employees technical knowledge in solving the problem and the employee's ability to serve customers well & maintain service quality are the aspects that the customers use to assess their level of satisfaction.

The regression analysis resulted in three models for predicting overall customer satisfaction. The first model shows quality of network as the only significant predictor that explains only 36.90% of the variation in broadband internet service of customer satisfaction. This shows that 63.10% of the variation in customer satisfaction may be explained by other factors that were not included in the modified SERVQUAL model, while, the second model depicts that quality of network and after sale service are significant predictors, explaining 42.80% of the variation in dependent variable. The remaining variation in customer satisfaction is attributed to the factors outside the modified SERVQUAL dimensions. In the third model where quality of network, after sale service and empathy were used as predictors of customer satisfaction, the variation explained 44.40% which is greater than the first two models in explaining the variation.

The regression analysis resulted in two models for predicting overall service quality. In the first model of service quality, magnitude of variation explained is low. The variation explained in this model is 29.50% only. This implies that 70.50% of the variation in service quality may be explained by other factors that were not considered in the modified SERVQUAL model. On the other hand, in the second model where qualities of network and after sale service dimensions are used as predictors of service quality, the variation explained 35.90% and the rest of the variations are covered by other factors.

CHAPTER V

5. Findings, Conclusion and Recommendations

5.1 Findings

1. The first question discovers the service quality gap in terms of the modified SERVQUAL dimensions. The difference between Perception and expectation scores of the modified SERVQUAL scale pointed out that wider gap is shown in quality of network dimension (-3.21), followed by after sale service (-2.79), reliability (-2.47), assurance (-2.42), responsiveness (-2.40), empathy (-2.19), and finally the narrower gap is for service price (-0.02) & tangible (-1.75). This shows that customer perceptions of ETC's broadband internet service quality performance fall below their expectations as evidenced by the negative service quality gap in all modified SERVQUAL dimensions with the exception of service price dimension hence the gap is very much insignificant.

Based on the type of the organizations, wider gap is registered in quality of network and after sale service dimensions for both types of organization with slight difference. The third larger gap for international organization is reliability (-2.79) whereas for the rest, the same dimension assurance is their third wider gap in service quality i.e. for big & small (-2.35) and for government (-2.38)

2. The second issue of the study centers upon assessing the overall institutional customer satisfaction and service quality of broadband internet services provided by ETC. The results concerning overall customer satisfaction as measured using a seven point Likert scale disclosed that nearly three-fourth (71.30%) of the respondents expressed their level of satisfaction below average indicating dissatisfaction. While only (7.80%) of them are reported as satisfied and about one-fifth (20.90%) found it average. Similarly, for the overall service quality measurement with a similar scale, results show that about three-fourth (76.7%) of the respondents rated below average that is broadband internet service quality provided by ETC is poor for institutional customers. However, only (7.7%) of the respondents rated the service above average i.e. good and the remaining 15.6% of them

rated the service quality as average. This reflects that satisfaction and service quality is highly interconnected.

3. The other area explored is that the strength of relationship among the modified SERVQUAL dimensions with overall customer satisfaction and service quality.

The result of Pearson correlation coefficient indicates that there is a strong positive relationship among the majority of dimensions and only negative relationship with service price with no significant value.

4. The results of the study discovered three regression models for overall customer satisfaction with quality of network the only predictor for the first model, quality of network & after sale service dimensions are the predictors for the second model and quality of network, after sale service and empathy dimensions of the modified SERVQUAL instrument as predictors for the third model. The first model explains about 36.90% of the variation in overall customer satisfaction, the second model explains 42.80% of the variation, while the third model explains 44.40% of the variation led by the predictors. In addition, both models are found statistically high significant.
5. Similarly, other two models are formed for overall service quality with quality of network as a single interpreter for the first and quality of network & after sale service together as predictors in the second model. The variation explained by the first model is 29.50% and that of the second model is 35.90% with high statistical significance.
6. Also, in the study it is found that **quality of network** and **after sale service** are the key determinant of both overall satisfaction and service quality as experienced by institutional customers' of broadband internet services of ETC in Addis Ababa.
7. In general, the findings of the study indicated that there are other additional factors that determine service quality and customer satisfaction in addition to quality of network, after sale service, and empathy criteria of service quality as these variables predict only less than half proportion of the two dependent variables.

5.2 Conclusion

Based on the analysis performed the following conclusions are discussed as follows:

- ❖ In this study, the data corresponding to customer perceptions and expectations with broadband internet service quality has been used to identify (in terms of customer satisfaction or service quality gap) areas in need of improvement. Consequently, from the analysis it can be concluded that quality of network dimension obtained the wider gap. Mainly, the gap score for **quality of networks**, the ability to download large amount of data and the speed of broadband internet service are the highest among the 35 items of the modified SERVQUAL dimensions followed by the consistency of speed. These underperformances resulted in the highest gap for the quality of network dimension. The second wider gap is obtained for **after sale service** followed by reliability, assurance, responsiveness, empathy, tangibility and service price.
- ❖ With regard to overall customer satisfaction of broadband internet services as experienced by institutional subscribers, it can be concluded that nearly three-fourth of the respondents expressed their level of satisfaction below four on a seven point Likert type scale (1 being very dissatisfied and 7 being very satisfied). With the same fashion, little more than three-fourth of the respondents rated the service quality of broadband internet below average i.e. poor on a similar scale (1 represents very poor and 7 represents very good).
- ❖ Based on the evidence of the regression models, poor speed, inconsistent speed, poor ability to download data in addition to other features of quality of network are likely to minimize the levels of overall perceived service quality.
- ❖ Furthermore, on the basis of the results founded, one can confirm that **after sale service** is another determinant of perceived service quality & customer satisfaction in addition to quality of network.

- ❖ According to the study, it can be further concluded that **empathy** dimension of the modified SERVQUAL instrument is the third determinant factor for overall customer satisfaction in addition to quality of network and after sale service dimensions.
- ❖ With regard to scale reliability, we can deduce that, SERVQUAL is a reliable instrument for the measurement of service quality, and customer satisfaction in the broadband internet service sector in Ethiopia.

5.3 Recommendations

1. Managing Customer Expectations

Managing customer expectations is a critical component in the marketing plan of service business. Customer expectations must be managed during the pre-purchase phase, at the service encounter, and the post-purchase phases. The goal of the firm should be to promote the exact service customers will receive and to provide the exact service customers expect. If ETC can match expectations and actual service, institutional customers will be satisfied. Based on the findings of the research, perception minus expectation scores of all service quality or customer satisfaction dimensions were negative and significantly wider, so it is recommended to manage all service quality dimensions as the same time as maximizing perceptions of service quality by managing customer expectation.

2. Working on quality of network

As per the research result, wider gap was registered on quality of network dimension. Obviously, ETC need to find a way to improve the quality of network and provide a consistent upload and download capacity depending on the subscribed bandwidth by using recent network technology in line with International Telecommunication Union (ITU) standards and upgrade the network capacity.

3. Developing effective after sale service or service recovery program

Based on the findings of this research, after sale service is one of the dimensions that the respondents needs to be improved and showed lower performance. After-sales or Post-sales service, which is also referred to as customer support, technical support, which is essential for achieving customer satisfaction and good long-term relationship. A post-sale service needs capability, primarily focused on problem solution or providing technical assistance promptly. After-sales service is often in response to a customer problem, i.e. service failure restoration, problem diagnosis, and expert assistance to resolve a problem. Therefore, after-sales service is a recovery process that attempts to resolve customer

problem, which, if not resolved, can causes dissatisfaction and less satisfied customers. In service provision, failure is a fact; the important thing is to develop an effective service recovery or complaint handling procedure. Thus, ETC has to be prepared to recover service failure proactively rather than reactively. There is a need to bring improvement on the different quality aspects of after sale service such as customer complaint handling quality, time taken to solve the problem, employees technical knowledge in solving customer problem and employees' ability to serve customer well & maintain service quality

4. Improving customer relationship

Empathy is found to be one of the predictors for overall customer satisfaction. Therefore, ETC should give more attention in improving the components listed in the empathy dimension i.e. try to give individual attention, employees in dealing with customers should be in a caring fashion and ETC's personnel particularly those working in customer service counters need to understand the specific requirements of the customers, since these quality features are determinants of satisfaction. Further, ETC needs to continue to improve interactions with potential and existing institutional or corporate broadband internet customers.

5. Focus on customer satisfaction and service quality

There is no ceiling or upper limit for quality standards as far as services are concerned. Services are always open to further improvements. Therefore, ETC should conduct a continuous research on service quality. ETC should develop quality circles and strategic groups among the employees, so that they can have a bank of ideas for further improvement. As per the result of the research, service quality of broadband internet service is poor and institutional customers are dissatisfied, so, providing more attention for improvement is recommended.

6. Last but not least, the models developed for the two dependent variables (overall satisfaction and overall service quality) explain below half portion of the variation, other variables should be considered and tested to ensure increased contribution to predict overall service quality and satisfaction of customers for further research in this area.

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Annex-I
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Post Graduate Studies
Department of Marketing Management

The purpose of this questionnaire is to gather information to conduct a research on the **assessment of institutional customers' satisfaction in the case of broadband internet services of ETC in Addis Ababa**. All information you will provide to my study will be kept strictly confidential and shall be used only for academic purpose. However, the findings of the research may use to improve the broadband internet services. Please, consider each question carefully.

Feel free to contact me if you have any questions.

Thank you in advance!
Aschale Sisay (0911-236017)
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Part one: - Demographic Information

Please circle or write your appropriate answer.

- i. For how long have you been a customer in broadband internet service?
 - a) Less than 1 year c) 2 to less than 4 years
 - b) 1 to less than 2 years d) more than 4 years
- ii. In what kind of business you are currently engaged in?
 - a) Big and Small business
 - b) Government organizations
 - c) Int'l org. and Embassies
- iii. Which internet speed you subscribe from ETC (in kilo bites)?
 - a) 64 c) 256 e) 1024
 - b) 128 d) 512 f) 2048 and above
- iv. For what purpose you use the internet?
 - a) For business/trading c) personal communication
 - b) Official communication d) if others please specify _____

Part two: - I would like your impressions about how well ETC provides Broadband internet service relative to your expectations and perception. For each of the following statements please indicate a) your genuine expectation of service by circling one of the numbers in the first column and b) your genuine perception (actual experience) of service by circling one of the numbers in the second column.

Note: - number 7 indicates your very high expectation or perception

Number 1 indicates your very low expectation or perception

Customer satisfaction dimensions	What is your expectation with regard to the given statements?	What is your perception of actual service you have got from ETC in the listed statement?
	Very High Very Low	Very High Very Low
I. Quality of network		
1. The speed of broadband internet service provided by ETC.	7 6 5 4 3 2 1	7 6 5 4 3 2 1
2. The consistency of speed ETC provides.	7 6 5 4 3 2 1	7 6 5 4 3 2 1
3. The ease of accessibility during peak hours.	7 6 5 4 3 2 1	7 6 5 4 3 2 1
4. Availability of 24 hours internet connection	7 6 5 4 3 2 1	7 6 5 4 3 2 1
5. The ability to download large amount of data	7 6 5 4 3 2 1	7 6 5 4 3 2 1
II. Service Price		
6. The service price you pay for the service you receive	7 6 5 4 3 2 1	7 6 5 4 3 2 1
7. The issuance of bill according to the schedule per month	7 6 5 4 3 2 1	7 6 5 4 3 2 1
8. The understandability and clarity of the bill	7 6 5 4 3 2 1	7 6 5 4 3 2 1

III. Reliability	Very High	Very Low	Very High	Very Low
9. The service providers' in performing according to promises and declaration (Providing the service as promised).	7 6 5 4 3 2 1		7 6 5 4 3 2 1	
10. ETC's capability in solving your problem with sincere interest.	7 6 5 4 3 2 1		7 6 5 4 3 2 1	
11. ETC's provision of service at the time it promises to do so (providing services at the promised time).	7 6 5 4 3 2 1		7 6 5 4 3 2 1	
12. ETC's accuracy in keeping its records.	7 6 5 4 3 2 1		7 6 5 4 3 2 1	
13. ETC's dependability in handling your problems.	7 6 5 4 3 2 1		7 6 5 4 3 2 1	
14. The ability to access all internet services without any restriction.	7 6 5 4 3 2 1		7 6 5 4 3 2 1	
IV. Responsiveness				
15. ETC in telling the customers exactly when the service will be performed.	7 6 5 4 3 2 1		7 6 5 4 3 2 1	
16. ETC employees in giving prompt service to customers.	7 6 5 4 3 2 1		7 6 5 4 3 2 1	
17. ETC employees willingness to help customers	7 6 5 4 3 2 1		7 6 5 4 3 2 1	
18. ETC employees readiness in respond to your request promptly.	7 6 5 4 3 2 1		7 6 5 4 3 2 1	
V. Assurance				
19. ETC employees' knowledge & skill in answering your question with respect to the service.	7 6 5 4 3 2 1		7 6 5 4 3 2 1	
20. ETC employees in making you feel safe in your transaction.	7 6 5 4 3 2 1		7 6 5 4 3 2 1	
21. ETC employees being courtesy consistently.	7 6 5 4 3 2 1		7 6 5 4 3 2 1	

22. ETC employees in instilling confidence in you (customers).	7 6 5 4 3 2 1	7 6 5 4 3 2 1
23. ETC in having free call numbers, brochures and websites for customers for clarification of your problems & request.	7 6 5 4 3 2 1	7 6 5 4 3 2 1
VI. Empathy		
24. ETC Employees in dealing with customers' in a caring fashion.	7 6 5 4 3 2 1	7 6 5 4 3 2 1
25. ETC Employees in understanding the needs of customers.	7 6 5 4 3 2 1	7 6 5 4 3 2 1
26. ETC Employees in giving customers individual attention.	7 6 5 4 3 2 1	7 6 5 4 3 2 1
VII. Tangibility		
27. The service provider's in using Up-to-date equipment.	7 6 5 4 3 2 1	7 6 5 4 3 2 1
28. The attractiveness of physical facilities of ETC.	7 6 5 4 3 2 1	7 6 5 4 3 2 1
29. ETC employees dressing and appearance.	7 6 5 4 3 2 1	7 6 5 4 3 2 1
30. ETC in having sufficient offices in different geographic areas.	7 6 5 4 3 2 1	7 6 5 4 3 2 1
VIII. After sales service		
31. The customers' complaint handling process.	7 6 5 4 3 2 1	7 6 5 4 3 2 1
32. The problem solving techniques regarding to the service.	7 6 5 4 3 2 1	7 6 5 4 3 2 1
33. The time taken to solve the problem.	7 6 5 4 3 2 1	7 6 5 4 3 2 1
34. The employee's technical knowledge in solving your problem.	7 6 5 4 3 2 1	7 6 5 4 3 2 1
35. The employee's ability to serve you well and maintain service quality.	7 6 5 4 3 2 1	7 6 5 4 3 2 1

Part Three: - Over all expectation, service quality and satisfaction

36. How do you evaluate the overall quality of broadband internet service provided by ETC?

Very good

Very poor

7 6 5 4 3 2 1

37. Overall, how satisfied are you with the broadband internet services given by ETC?

Highly satisfied

Very dissatisfied

7 6 5 4 3 2 1

Thank you!

Annex-2

አዲስ አበባ ዩኒቨርሲቲ

የድህረ ምረቃ ፕሮግራም

ማርኬቲንግ ማኔጅመንት ዲፓርትመንት

ይህ መጠይቅ በአዲስ አበባ ዩኒቨርሲቲ ለሁለተኛ ዲግሪ ማሟያ የሚያስፈልገውን ጥናት ለማካሄድ የሚረዳ መረጃ ለመሰብሰብ ታስቦ የተዘጋጀ ነው። ጥናቱ በብሮድባንድ ኢንተርኔት አገልግሎት ላይ ደንበኞች ያላቸውን እርካታ ለማየት የተዘጋጀ ነው። የምትሰጡት መረጃ ለሌላ ወገን አይተላለፍም። ነገር ግን የጥናቱን ውጤት የብሮድባንድ ኢንተርኔት አገልግሎት ለማሻሻል ኢቴኮ ሊጠቀምበት ይችላል። ስለሆነም ራስዎን እንደ ደንበኛ በመውሰድ ይህን መጠይቅ በተገቢው መንገድ በመሙላት ትክክለኛ እና ግልፅ መረጃ በመስጠት ለጥናቱ አስተዋፅኦ እንዲያደርጉ በአክብሮት እጠይቃለሁ።

አስተያየት ካለዎት ያለምንም ስጋት ከታች በተጠቀሰው አድራሻ መስጠት ይችላሉ።

ስለትብብርዎ በቅድሚያ አመሰግናለሁ!

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ክፍል 1:- አጠቃላይ መረጃ

i/ ለምን ያህል ጊዜ በብሮድባንድ ኢንተርኔት አገልግሎት በደንበኝነት ቆይተዋል?

ሀ/ ከ1 ዓመት በታች ሐ/ 2-4 ዓመት

ለ/ 1-2 ዓመት መ/ ከ4 ዓመት በላይ

ii/ በአሁኑ ሰዓት በምን ዓይነት የሥራ መስክ ተሰማርተው ይገኛሉ?

ሀ/ በትልቅ/በትንሽ የንግድ ድርጅት ሐ/ ኢንተርናሽናል ድርጅት ወይም ኢምባሊ

ለ/ የመንግስት ድርጅት

iii/ ከኢቴኮ የገዙት የብሮድባንድ ኢንተርኔት ፍጥነት በኪሎ ባይት ምን ያህል ነው?

ሀ/ 64 ሐ/ 256 ሠ/ 1024

ለ/ 128 መ/ 512 ረ/ 2048 እና ከዚያ በላይ

iv / በብዛት ኢንተርኔትን ለምን አገልግሎት ያውሉታል?

ሀ/ ለቢዝነስ ወይም ለንግድ ሐ/ ለግል ግንኙነት

ክፍል 2:- ከታች የተዘረዘሩ ጥያቄዎችን በጥሞና በመገንዘብ ያለዎትን አስተያየት እንዲሰጡ በአክብሮት

እጠይቃለሁ። ቁጥር 1 ማለት የነበረዎት ዝቅተኛ ግምት ወይም ያገኙት ዝቅተኛ አገልግሎት፤ ቁጥር 7 ማለት የነበረዎት ከፍተኛ ግምት ወይም ያገኙት ከፍተኛ አገልግሎት ማለት ነው።

የደንበኞችን እርካታ መለኪያ መስፈርቶች	አገልግሎት ከማግኘትዎ በፊት የነበረዎት ግምት (Expectations)		አገልግሎቱን መጠቀም ከጀመሩ በኋላ ስለ አገልግሎቱ ያለዎት ስሜት	
	በጣም ከፍተኛ	በጣም ዝቅተኛ	በጣም ከፍተኛ	በጣም ዝቅተኛ
<u>የኔትወርክ ጥራት (quality of network)</u>				
1. በኢቴክ የሚሰጠው የብሮድባንድ ኢንተርኔት አገልግሎት ፍጥነት	7	6 5 4 3 2 1	7	6 5 4 3 2 1
2. ኢቴክ የሚያቀርበው የኢንተርኔት ፍጥነት የማይለዋወጥ ስለመሆኑ	7	6 5 4 3 2 1	7	6 5 4 3 2 1
3. ሁሉም ደንበኛ በአንድ ጊዜ ኢንተርኔት በሚጠቀምበት ስዓት በቀላሉ አገልግሎቱን ማግኘት ስለመቻሉ	7	6 5 4 3 2 1	7	6 5 4 3 2 1
4. የኢንተርኔት አገልግሎት ለ24 ስዓት ሙሉ ማግኘት ስለመቻሉ	7	6 5 4 3 2 1	7	6 5 4 3 2 1
5. ከፍተኛ የሆነ መረጃ ዳውንሎድ ለማድረግ ኢንተርኔቱ ያለው አቅምን በተመለከተ	7	6 5 4 3 2 1	7	6 5 4 3 2 1
<u>የአገልግሎት ዋጋ (service price)</u>				
6. የአገልግሎት ዋጋ ከሚያገኙት አገልግሎት ጋር ሲታይ	7	6 5 4 3 2 1	7	6 5 4 3 2 1
7. ወርሃዊ ቢል የሚቀርበው በወቅቱ ስለመሆኑ	7	6 5 4 3 2 1	7	6 5 4 3 2 1
8. የአገልግሎት ክፍያ ቢል ግልፅና ለመረዳት የሚያስችል ስለመሆኑ	7	6 5 4 3 2 1	7	6 5 4 3 2 1
<u>ታማኝነት (reliability)</u>				
9. አገልግሎት ሰጪው እየሰራ ያለው ባስቀመጠው ደንብና ቃል በገባው መሰረት ስለመሆኑ	7	6 5 4 3 2 1	7	6 5 4 3 2 1
10. አንድ ደንበኛ ችግር ሲገጥመው አገልግሎት ሰጪው ችግሩን ለመፍታት ያለው ብቃት እና ቀንነት በተመለከተ	7	6 5 4 3 2 1	7	6 5 4 3 2 1
11. አገልግሎት ሰጪው አገልግሎቱን ቃል በገባው ጊዜ ውስጥ ስለመስጠቱ	7	6 5 4 3 2 1	7	6 5 4 3 2 1
12. አገልግሎት ሰጪው የደንበኞችን መረጃ በትክክል መዝግቦ ስለመያዙ	7	6 5 4 3 2 1	7	6 5 4 3 2 1
13. ኢቴክ የደንበኞችን ችግር በመፍታት የሚተማመኑበት ስለመሆኑ	7	6 5 4 3 2 1	7	6 5 4 3 2 1
14. ሁሉንም የኢንተርኔት አገልግሎቶች ያለምንም	7	6 5 4 3 2 1	7	6 5 4 3 2 1

ገደብ መጠቀም ስለመቻሉ ተጠያቂነት (Responsiveness)		በጣም ከፍተኛ	በጣም ዝቅተኛ	በጣም ከፍተኛ	በጣም ዝቅተኛ										
15. ኢቴኮ አገልግሎቱ የሚሰራበትን ጊዜ በትክክል ለደንበኞች ስለመናገሩ		7	6	5	4	3	2	1	7	6	5	4	3	2	1
16. የኢቴኮ ሠራተኞች ለደንበኞ ቀልጣፋ አገልግሎት ስለመስጠታቸው		7	6	5	4	3	2	1	7	6	5	4	3	2	1
17. የኢቴኮ ሠራተኞች ደንበኞችን ለመርዳት ሁልጊዜ ፈቃደኛ ስለመሆናቸው		7	6	5	4	3	2	1	7	6	5	4	3	2	1
18. የኢቴኮ ሠራተኞች የደንበኞችን ጥያቄዎች በፍጥነት ለመመለስ ዝግጁ ስለመሆናቸው		7	6	5	4	3	2	1	7	6	5	4	3	2	1
ዋስትና ስለመስጠት (Assurance)															
19. የኢቴኮ ሠራተኞች እውቀትና ስኬል የደንበኞችን ጥያቄ ለመመለስ የሚያስችል ስለመሆኑ		7	6	5	4	3	2	1	7	6	5	4	3	2	1
20. የኢቴኮ ሠራተኞች ደንበኞች አገልግሎቱን በሚዝቡበት ወቅት ጥሩ ስሜት እንዲሰማቸው ስለማድረጋቸው		7	6	5	4	3	2	1	7	6	5	4	3	2	1
21. የኢቴኮ ሠራተኞች ሁልጊዜ ትህትና ያላቸው ስለመሆኑ		7	6	5	4	3	2	1	7	6	5	4	3	2	1
22. የኢቴኮ ሠራተኞች ደንበኞች እምነት እንዲያድርባቸው ስለማድረጋቸው		7	6	5	4	3	2	1	7	6	5	4	3	2	1
23. የደንበኞችን ችግርና ያላቸውን ጥያቄ ግልፅ ለማድረግ የሚረዳ ነፃ የጥሪ አገልግሎት፣ ቡረሽርስ እና ዌብ ሳይቶች ስለመኖራቸው		7	6	5	4	3	2	1	7	6	5	4	3	2	1
የደንበኞችን ስሜት ስለመረዳት (Empathy)															
24. የኢቴኮ ሠራተኞች ከደንበኞች ጋር ጥንቃቄ በተሞላበት መንገድ ስለመወያየታቸው		7	6	5	4	3	2	1	7	6	5	4	3	2	1
25. የኢቴኮ ሠራተኞች የደንበኞችን ፍላጎት መረዳት ስለመቻላቸው		7	6	5	4	3	2	1	7	6	5	4	3	2	1
26. የኢቴኮ ሠራተኞች ለደንበኞች የግል እንክብካቤ ስለመስጠታቸው		7	6	5	4	3	2	1	7	6	5	4	3	2	1
ተጨባጭ ሁኔታዎች (Tangibility)															
27. አገልግሎት ሰጭው ዘመናዊ የሆኑ መሳሪያዎችን ስለመጠቀሙ		7	6	5	4	3	2	1	7	6	5	4	3	2	1
28. የኢቴኮ የመገልገያ መሳሪያዎች ለእይታ ማራኪ መሆናቸውን በተመለከተ		7	6	5	4	3	2	1	7	6	5	4	3	2	1

29. የኢ.ቴክ ሠራተኞች በአገልግሎት ወቅት ጥሩ ልብስ መልበሳቸውና ንፁህ ሆነው ስለመቅረባቸው	7 6 5 4 3 2 1	7 6 5 4 3 2 1
30. ኢ.ቴክ በቂ የሆኑ የአገልግሎት መስጫ ቢሮዎች በተለያዩ ቦታዎች ስለመኖራቸው	7 6 5 4 3 2 1	7 6 5 4 3 2 1
ከሽያጭ በኋላ ስላለው አገልግሎት (After sales services)		
31. አገልግሎት ሰጭው የደንበኞችን ቅሬታ የሚያስተናግድበት ሁኔታ በተመለከተ	7 6 5 4 3 2 1	7 6 5 4 3 2 1
32. አገልግሎቱን በተመለከተ የሚከሰቱ ችግሮችን ለመፍታት ኢ.ቴክ የሚጠቀመው መንገድ	7 6 5 4 3 2 1	7 6 5 4 3 2 1
33. የደንበኞችን ችግር ለመፍታት የሚወስደው ጊዜ	7 6 5 4 3 2 1	7 6 5 4 3 2 1
34. የደንበኞችን ችግር ለመፍታት ሰራተኞች ያላቸው ቴክኒካል ዕውቀት	7 6 5 4 3 2 1	7 6 5 4 3 2 1
35. ደንበኞችን በአግባቡ የማገልገልና የአገልግሎቱን ጥራት ለመጠበቅ ሠራተኞች ያላቸው ችሎታ	7 6 5 4 3 2 1	7 6 5 4 3 2 1

ክፍል 3:- የአገልግሎት ጥራትና እርካታ ላይ አጠቃላይ ያለዎት ግምት

36. የኢ.ቴክን የብሮድባንድ ኢንተርኔት አገልግሎት ጥራት በጥቅሉ እንዴት ይገመግሙታል?

በጣም ጥሩ	በጣም መጥፎ/ ዝቅተኛ
7 6 5 4 3 2 1	

37. በአጠቃላይ የብሮድባንድ ኢንተርኔት አገልግሎት ምን ያህል አርክቶዎታል?

በጣም እረክቻለሁ	በጣም አልረካሁም
7 6 5 4 3 2 1	

በጣም አመሰግናለሁ!!!

Annex III
Correlation of overall customer satisfaction, overall service quality and
Modified SERVQUAL dimensions

		OCS	OSQ	QNW	SP	REL	RES	ASS	EMP	TAN	AFT
OCS	Pearson Correlation	1	.832**	.612**	-.152	.423**	.354**	.398**	.196*	.228**	.573**
	Sig. (2-tailed)		.000	.000	.086	.000	.000	.000	.027	.009	.000
	N	129	129	129	129	129	129	129	128	129	129
OSQ	Pearson Correlation	.832**	1	.548**	-.081	.441**	.361**	.407**	.253**	.300**	.542**
	Sig. (2-tailed)	.000		.000	.360	.000	.000	.000	.004	.001	.000
	N	129	129	129	129	129	129	129	128	129	129
QNW	Pearson Correlation	.612**	.548**	1	-.108	.635**	.419**	.588**	.306**	.398**	.613**
	Sig. (2-tailed)	.000	.000		.224	.000	.000	.000	.000	.000	.000
	N	129	129	129	129	129	129	129	128	129	129
SP	Pearson Correlation	-.152	-.081	-.108	1	.058	-.029	.045	-.038	.056	-.101
	Sig. (2-tailed)	.086	.360	.224		.513	.745	.611	.667	.526	.252
	N	129	129	129	129	129	129	129	128	129	129
REL	Pearson Correlation	.423**	.441**	.635**	.058	1	.698**	.781**	.686**	.538**	.736**
	Sig. (2-tailed)	.000	.000	.000	.513		.000	.000	.000	.000	.000
	N	129	129	129	129	129	129	129	128	129	129
RES	Pearson Correlation	.354**	.361**	.419**	-.029	.698**	1	.723**	.757**	.528**	.691**
	Sig. (2-tailed)	.000	.000	.000	.745	.000		.000	.000	.000	.000
	N	129	129	129	129	129	129	129	128	129	129
ASS	Pearson Correlation	.398**	.407**	.588**	.045	.781**	.723**	1	.723**	.623**	.737**
	Sig. (2-tailed)	.000	.000	.000	.611	.000	.000		.000	.000	.000
	N	129	129	129	129	129	129	129	128	129	129
EMP	Pearson Correlation	.196*	.253**	.306**	-.038	.686**	.757**	.723**	1	.525**	.577**
	Sig. (2-tailed)	.027	.004	.000	.667	.000	.000	.000		.000	.000
	N	129	129	129	129	129	129	129	129	129	129
TAN	Pearson Correlation	.228**	.300**	.398**	.056	.538**	.528**	.623**	.525**	1	.556**
	Sig. (2-tailed)	.009	.001	.000	.526	.000	.000	.000	.000		.000
	N	129	129	129	129	129	129	129	128	129	129
AFT	Pearson Correlation	.573**	.542**	.613**	-.101	.736**	.691**	.737**	.577**	.556**	1
	Sig. (2-tailed)	.000	.000	.000	.252	.000	.000	.000	.000	.000	
	N	129	129	129	129	129	129	129	128	129	129

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

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

**Annex IV: Results of stepwise Regression- Overall customer satisfaction
Variables Entered/Removed(a)**

Model	Variables Entered	Variables Removed	Method
1	Quality of network		Stepwise (Criteria: Probability-of-F-to-enter $\leq$.050, Probability-of-F-to-remove $\geq$.100).
2	After sale service		Stepwise (Criteria: Probability-of-F-to-enter $\leq$.050, Probability-of-F-to-remove $\geq$.100).
3	Empathy		Stepwise (Criteria: Probability-of-F-to-enter $\leq$.050, Probability-of-F-to-remove $\geq$.100).

a. Dependent Variable: how satisfied are you with the broadband internet services given by ETC?

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.612(a)	.374	.369	1.087
2	.661(b)	.437	.428	1.035
3	.676(c)	.457	.444	1.021

a. Predictors: (Constant), Quality of network

b. Predictors: (Constant), Quality of network, After sale service

c. Predictors: (Constant), Quality of network, After sale service, Empathy

ANOVA (d)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	89.805	1	89.805	75.999	.000(a)
	Residual	150.071	127	1.182		
	Total	239.876	128			
2	Regression	104.863	2	52.431	48.931	.000(b)
	Residual	135.013	126	1.072		
	Total	239.876	128			
3	Regression	109.642	3	36.547	35.078	.000(c)
	Residual	130.234	125	1.042		
	Total	239.876	128			

a. Predictors: (Constant), Quality of network

b. Predictors: (Constant), Quality of network, After sale service

c. Predictors: (Constant), Quality of network, After sale service, Empathy

d. Dependent Variable: Overall, how satisfied are you with the broadband internet services given by ETC?

Coefficients (a)

Mode		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
1		B	Std. Error	Beta	B	Std. Error
1	(Constant)	4.768	.263		18.153	.000
	Quality of network	.664	.076	.612	8.718	.000
2	(Constant)	4.928	.254		19.422	.000
	Quality of network	.453	.092	.417	4.935	.000
	After sale service	.304	.081	.317	3.749	.000
3	(Constant)	4.802	.257		18.680	.000
	Quality of network	.441	.091	.406	4.853	.000
	After sale service	.405	.093	.422	4.363	.000
	Empathy	-.166	.078	-.172	-2.142	.034

a. Dependent Variable: how satisfied are you with the broadband internet services given by ETC?

Excluded Variables(d)

Model		Beta In	t	Sig.	Partial correlation	Collinearity statistics Tolerance
1	Service price	-.087(a)	-1.235	.219	-.109	.988
	Reliability	.057(a)	.624	.533	.056	.596
	Responsiveness	.119(a)	1.550	.124	.137	.825
	Assurance	.058(a)	.665	.507	.059	.654
	Empathy	.005(a)	.071	.943	.006	.907
	Tangibility	-.019(a)	-.241	.810	-.021	.841
	After sale service	.317(a)	3.749	.000	.317	.624
2	Service price	-.076(b)	-1.127	.262	-.100	.986
	Reliability	-.187(b)	-1.799	.074	-.159	.405
	Responsiveness	-.075(b)	-.813	.417	-.073	.523
	Assurance	-.191(b)	-1.884	.062	-.166	.427
	Empathy	-.172(b)	-2.142	.034	-.188	.675
	Tangibility	-.167(b)	-2.095	.038	-.184	.686
3	Service price	-.072(c)	-1.085	.280	-.097	.986
	Reliability	-.096(c)	-.779	.437	-.070	.288
	Responsiveness	.066(c)	.580	.563	.052	.333
	Assurance	-.099(c)	-.796	.428	-.071	.283
	Tangibility	-.125(c)	-1.500	.136	-.133	.616

a. Predictors in the Model: (Constant), Quality of network

- b. Predictors in the Model: (Constant), Quality of network, After sale service
- c. Predictors in the Model: (Constant), Quality of network, After sale service, Empathy
- d. Dependent Variable: Overall, how satisfied are you with the broadband internet services given by ETC?

Annex v: Results of stepwise Regression-Overall service quality of broadband Internet

Variables Entered/Removed(a)

Mode	Variables Entered	Variables Removed	Method
1	Quality of network		Stepwise (Criteria: Probability-of-F-to-enter $\leq$.050, Probability-of-F-to-remove $\geq$.100).
2	After sale service		Stepwise (Criteria: Probability-of-F-to-enter $\leq$.050, Probability-of-F-to-remove $\geq$.100).

a. Dependent Variable: How do you evaluate the overall quality of broadband internet service provided by ETC?

Model Summary

Mode	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.548(a)	.301	.295	1.074
2	.607(b)	.369	.359	1.025

a. Predictors: (Constant), Quality of network

b. Predictors: (Constant), Quality of network, After sale service

ANOVA(c)

Mode		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	63.079	1	63.079	54.642	.000(a)
	Residual	146.611	127	1.154		
	Total	209.690	128			
2	Regression	77.306	2	38.653	36.789	.000(b)
	Residual	132.384	126	1.051		
	Total	209.690	128			