

**An Assessment of Industrial Customers' Satisfaction at Ethiopian
Electric Power Corporation: A Case of South Addis Ababa Region**

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Abstract

The survival of any organization in a highly competitive environment depends on its ability to provide the best service quality to its existing customers as the quality of service is a key factor in the success of any organization. Though a stable supply of enough energy is a must for industrialization, Ethiopia's growing industrial sector has come with an unprecedented rise in power demand. Despite the introduction of quality improvement programs and several customer care packages in the past, service quality gaps are still enduring in EEPCo. The study has the objective of assessing industrial customers' satisfaction on service quality using SERVQUAL model. It also addresses the problems of quality gaps through the survey done at EEPCo, South Addis Ababa Region Industrial customers. The study was conducted using a descriptive survey method where the respondents were industrial customers and frontline managers. The sample size was 333 industrial customers and these were selected using simple random sampling technique. Front line managers were selected through purposive sampling. Moreover, structured questionnaires and interviews are tools used to gather relevant information and statistical tools like percentage, tables and charts are used to analyze the data. The study shows performance of EEPCo in providing quality service to its industrial customers is not in a situation to meet their expectations. In all dimensions of the SERVQUAL; tangibles, reliability, responsiveness, empathy, and assurance, it's found that there is a negative gap between service expectations and service perceptions. Therefore, the Corporation should come up with an appropriate service delivery standards, proper complaint handling mechanisms, relevant training for its employees, and strengthening decision making power of employees. Decision makers also have to exert maximum effort in quality improvement programs so that the corporation ensures industrial customers satisfaction.

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1. Introduction

1.1 Background of the Study

In today's global and turbulent environment, organizations compete not only with local companies but also with foreign counter parts in manufacturing and providing superior goods and services. It is also obvious that in today's competitive environment, coming with differentiated and superior service offer has no substitute. Apart from goods, services need special care and attention due to its nature. Kumar(2008) further explains that when an organization produces goods and services of quality at economic cost and consistently meeting the customers' needs, then the organization is said to have satisfied customer. Customer satisfaction is seen as a key performance indicator within business. 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.

Electricity sales have been growing at the fastest pace ever with 13.5% growth in the past five years. This rapid growth in demand started in the year 2000 and get faster in the latter years. It is to be noted that this unprecedented growth was also accompanied by frequent and substantial power cuts. This means unconstrained demand growth would be even faster, probably close to 20 percent per year (Ethio Resource Group, 2009). Besides fastest demand for electricity, the study undertaken by Japanese Embassy in Ethiopia (2009) shows that enhancement of the energy sector is a must in order to maintain the economic growth and become a middle-income country in 20-30 years through industrialization, considering the difficult macro-economic situation. Since the Corporation's service delivery process to satisfy the needs of its industrial customers will lay a foundation for industrial led economy, strengthening the energy supply and scaling up

quality has prominent role in bringing economic growth and macro-economic stability.

Excellent service can be energizing because it requires the building of an organizational culture in which people are challenged to perform to their potential and are recognized and rewarded when they do (Berry et.al., 1994). In contrast to this, several organizations do not give emphasis to excel such competence. This in turn will lead to poor service delivery and less profit. Satisfaction is not an easy feeling since the customers are always in question to meet their limitless needs. Recently, Customer satisfaction is the daily issues of many people and institutions in Ethiopia. The reason is that it is being widely used on the progress for economic, business and social activities. Customers are the main actors in these activities.

According to Ethio Resource Group (2009) study, Electricity is a critical economic infrastructure. If not delivered where and when needed, serious damage ensues for the economy. Considerable potential output has been lost due to power cuts in the past few years. Potential losses from power disruption will increase in the future as the economy grows and the relative contributions of the industry and service sectors increase in the economy. Power supply must increase as rapidly as demand to avoid such losses and to ensure sustained growth. This is the rationale upon which the government is accelerating its investment in expanding the power system.

The existing annual electricity production capacity of the Ethiopian Electric Power Corporation (EEPCo) is about 2178 MW and the number of customers is about 2.26 million. Even if the number of customers has increased by more than 20% annually, Ethiopian Electric Power Corporation (EEPCo) cannot meet the need for electric power (EEPCo, 2011/12). The

corporation, therefore, ought to think about it and work hard strategically to meet the power supply need of the socio-economic development of the country.

According to Ethiopian Electric Power Corporation (EEPCo) annual bulletin of 2011/2012, concerning quality of supply, the service quality in the electrified areas is not satisfactory. This is due to poor design, lack of care and negligence during implementation, and lack of scheduled maintenance. This resulted in inappropriate conductor size in the distribution system, poor quality of construction, lack of maintenance, transformer overloading, phase imbalance, extended outage times under faulty condition, high system losses and poor safety situation has also time and again, affected technicians as well as the general public.

Despite the fact that quality service provision and ensuring customer satisfaction is a key issue for all categories of customers, looking the problems faced by industrial customers is indispensable. Ethiopian Electric Power Corporation (EEPCo) collects about 80% of its revenue from only 20% of its industrial customers. As the important contributor of the revenue, they should be given special consideration. However, continuous power interruption, low level of responsiveness, unable to perform the promised service dependably and accurately and the like issues are the problems raised by industrial customers of Ethiopian Electric Power Corporation. To this end, it is important to assess industrial customers' satisfaction on service quality so that EEPCo knows the seriousness of the problem and give remedial solutions.

1.2 Objectives of the Study

The main objective of the study is to explore and evaluate the satisfaction level of industrial customers on service quality at EEPCo. The study also focused on achieving the following specific objectives:

- To identify the gap between industrial customers' expectations and perceptions of service quality.
- To measure the quality of service and level of industrial customers' satisfaction.
- To identify organizational factors that affect industrial customers' satisfaction.
- To pinpoint the most effective ways of closing service quality gaps and chooses which gaps to focus on.

2. Literature Review

2.1 Related Theories

As a management philosophy, *Theory of constraints (TOC)*, as described by Holley (2007), states that the use of the principles underlying the problem solving paradigm lead to significantly increased customer service quality with respect to all five dimensions of customer service quality. By using the principles underlying this paradigm, problems encountered as a result of incorporating new technology or problems with the assessment of proposed changes to the service system can be minimized or eliminated, leading to improved customer service quality. The use of the principles underlying the logistics paradigm was found to have a significant effect on each of the dimensions with the exception of tangibles. Under the logistics paradigm, a

system-wide view must be taken. Having this broad perspective leads to better customer service quality. The principles underlying the global performance measurement paradigm were not found to affect customer service quality.

The other theory related to quality service is *generic theory of service quality*. According to Senge et, al. (1993), the generic theory of service quality and capacity has been elaborated in a systems dynamic model. The service quality/capacity model stimulates a service center where customers enter the system and after a waiting-time, are served by the center's employees. Service capacity i.e., service personnel, years of experience, skill and motivation is required to provide that service; the desired amount of capacity is determined by the desired level of quality, and the desired throughput of the service center. If a particular request is not satisfied to the customer's standard, it comes back in to the service back log and has to be reprocessed as rework.

The following figure shows the whole picture of the theory.

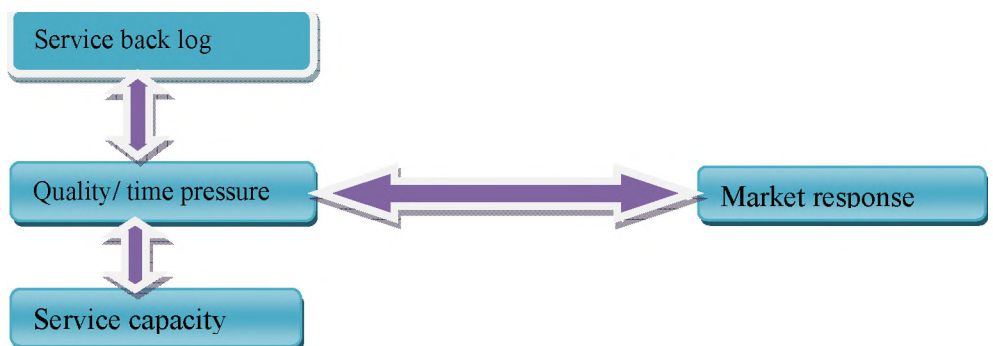


Figure 1. Systems dynamic model (Source:Senge et, al., 1993)

The other important theory in relation to the issue is *disconfirmation theory*, which argues that 'satisfaction is related to the size and direction of the

disconfirmation experience that occurs as a result of comparing service performance against expectations'. Ekinici et, al., (2004) clarify that it is a judgment that a product or service feature, or the product or service itself, provided a pleasurable level of consumption-related fulfillment, including levels of under- or over-fulfillment.

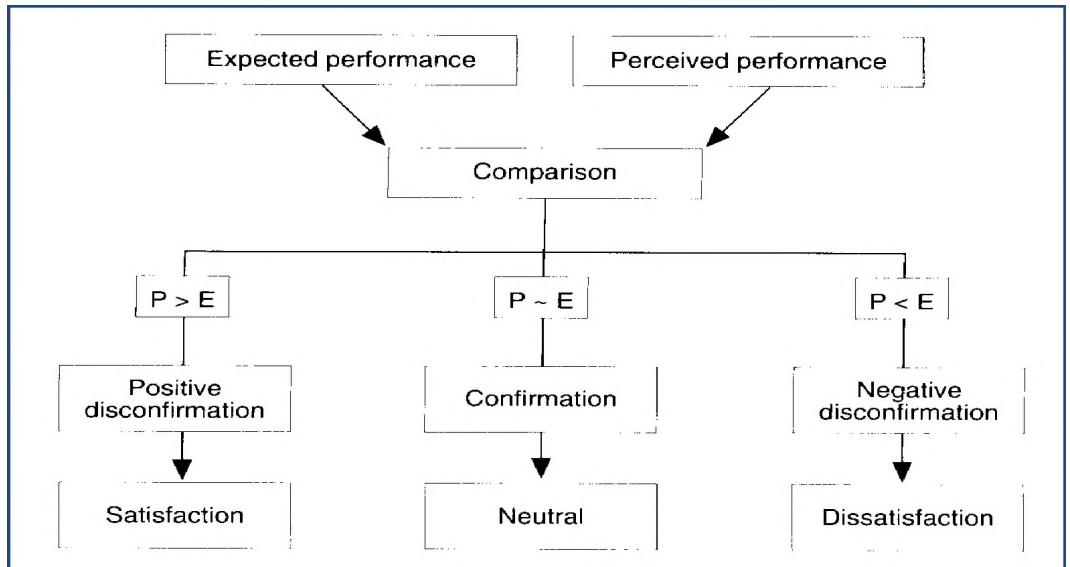


Figure2. Disconfirmation theory model (Source:Ekinici et, al., 2004)

2.2 Conceptual Review

2.2.1 Customer Service and Service Concept

For a service sector, the whole range of activity and generation of income swivels around the customer (Mengi, 2009). The scope of services marketing is enormous. About half of what is spent goes for services, and two thirds of nongovernmental jobs are in service industries. It is predicted that the service sector will continue to grow faster than the goods sector of the economy (Stanton et, al. 1991). As societies become increasingly

affluent, more of their resources are devoted to services. In the U.S., more than three-quarters of the workforce is employed in the service sector (Heitzer et.al, 2011), the share of services in GDP is more than 74% while the share of manufacturing is less than 20% (Ramaswamy et.al, 2002). In addition, Kim et.al. (2013) described that Customer management is a very important issue for organizations across the world. Because a large majority of firms pursuing global management are considering diverse strategies to achieve dominance in fiercely competitive markets and reduce gaps in product quality between brands through technological development, it is vital that they strengthen their competitiveness in terms of intangibles such as services.

According to Berkowitz et.al. (1994), service is defined as an intangible items that an organization provides to customers. On the other hand, Stanton et.al. (1991), states that most product offerings are a mix of tangible goods and intangible services, located on a spectrum ranging from pure goods to pure services. However, services are identifiable, intangible activities that are the main object of a transaction designed to provide want - satisfaction to customers. Others like Singh (2002) look service as any activity undertaken for the express purpose of aiding customers. While this is a rather vague statement, it excludes many activities.

In this era of globalization, the concern for services should be seen at upper hand. Since customers are the major focus of every business activity, organizations must exert maximum effort to enhance the service provision. At the same time, organizations need to look the service setting strategically. On the other hand, customer service is the set of activities an organization uses to win and retain customers' satisfaction. It can be provided before, during, or after the sale of the product or service and

viewed strategically as it is the decisive factor for long term survival and profitability of the firm.

Besterfield et al (2004) described elements of customer service as: (i) Organization - identify each market sector, write down requirements, communicate requirements, organize processes, organize physical space. (ii) Customer care - meet customer's expectations, get the customer's point of view, deliver what is promised, make the customer feel valued, respond to all complaints, over-respond to the customer, provide a clean and comfortable customer reception area. (iii) Communication - optimize the trade off between time and personal attention, minimize the number of contact points, provide pleasant, knowledgeable, and enthusiastic employees, write documents in customer friendly language. (iv) Front-line people - hire people who like people, challenge them to develop better methods, give them the authority to solve problems, serve them as internal customers, be sure they are adequately trained, recognized and rewarded for their performance. (v) Leadership-lead by example, listen to the front-line people, strive for continuous process improvement. In order to fulfill the needs and wants of customers, getting information about these service elements are significant.

2.2.2 Attributes of Service

Many authors like Gilmore (2002); Kotler et al. (2009) and others wrote much on the unique characteristics of services. However, Kumar's (2008) description of services attributes is comprehensive and described as:

- Services are typically intangible.
- The production and consumption of many services are simultaneous.
- The service may not be separable from the person or the seller.

- The customer may be involved in the service performance.
- The service process including staff at the customer interface becomes integral to service quality.
- Variability exists in services depending upon inputs and resources; quality can be affected and resulted in lack of standardization so the use of quality indicators and standards in the conventional sense is difficult.
- Many purchases cannot be stored to meet fluctuations in demand.

2.2.3 Service Quality

Quality is critical to corporate success as it plays a vital role in improving organizational productivity. Jan Van (2009) defined quality as ‘the totality of inherent characteristics of a product or service that bear on its ability to increase the demand for that product or service at a fixed price’ and can best be measured by capturing customer perceptions of the performance of those characteristics. Service quality is an outgrowth of the total quality management (TQM) movement of the 1980s and suffers from that movement’s focus on the provider rather than the value derived by customers (Klaus et.al., 2012). When compared to product quality, service quality is difficult to measure, define, control and communicate (Stanton, 1991). He also added that assuming similar times and locations, quality of service is the only factor that differentiates the different offerings. In view of meeting customer requirements, Oakland (2009) states that it has wide implications and may include availability, delivery, reliability, maintainability, and cost effectiveness, are among many other features.

For an organization to be truly effective, each of its components must work properly together. Each part, each activity, each person in the organization affects and is in turn affected by others. Errors have a way of multiplying, and failure to meet the

requirements in one part or area creates problems elsewhere, leading to yet more errors, yet more problems, and so on. (Oakland, 2006, pp.15)

Customer service and delivering quality service is the major issue determining the competitive edge of organizations. Lack of or failure to meet quality will lead an organization to lose all or some of its customers. A great emphasis is needed for a service to retain all its qualities that customers need. Quality in a service business has become a measure of the extent to which the service provided meets the customer's expectations. In the modern highly competitive business world, the key to sustainable competitive advantage lies in delivering high quality service that will in turn, lead to satisfied customers. Customer satisfaction is considered a prerequisite of customer retention and loyalty, and can help to boost profitability, market share and return on investment.

According to Gronroos (1994) cited in Anglova et.al. (2011) there are three dimensions of service quality stated as:

1. *Technical Quality*, which involves what the customer is receiving from the service delivery. This can be measured by the consumer in a rather objective manner.
2. *Functional Quality*, which involves the manner in which the service is delivered. This concerns the psychological interaction between the buyer and the seller perceived in a very subjective way, and would include elements such as: Attitudes and behavior of employees; Approachability of service personnel; Accessibility of service; Appearance and personality of personnel; Relationship between employees, and Interrelationships between employees and customers.
3. *Corporate Image* dimension of quality is the result how consumers perceive the firm, and it is expected to be built up mainly by the

technical and functional quality of its services, and will eventually affect service perceptions

2.2.4 Customer Satisfaction

Several researchers emphasized the importance of customer service as a key for organizational success. Arshi et, al. (2013) propound that the most productive output of an organization is production of customer satisfaction. The real value lies in delivering customer satisfaction which precedes customer retention and profits. Although most organizations understand the importance of this stakeholder, few are able to commit themselves to achieving customer satisfaction. For them customer service is an attitude and not a department or competency.

A customer-led company recognizes that its only true assets are satisfied customers. Without satisfied customers the balance sheet's assets are merely scrap. The notion of customers as assets is not a philosophical point , but a hard, economic one. Companies can actually measure the lifetime value of customers and estimate the potential revenues they will generate. The results can be staggering and should open the eyes of management to the profit implications of being customer led(Doyle,2002). In supporting the idea Jyot et,al., (2012) put forward that conforming to customer's needs and expectations is the essence for success in today's business. Organizations that understand what customers really want and provide a product or service to meet these requirements can gain competitive advantage and profit. Generally speaking, if organizations improve their communication with their customers and commit themselves to delivering customer service and develop necessary competencies for it, they would be able to deliver the desired level of customer satisfaction and meet organizational goals.

2.2.5 Service Quality and Customer Satisfaction

Issues of service quality and customer satisfaction lie at the heart of services marketing and management. Both are seen as desirable outputs of any service strategy. Taking account of their different origin Baron et,al. (2003) state that quality is generally conceptualized as an attitude, the customer's comprehensive evaluation of a service offering. It is built up from a series of evaluated experiences and hence is less dynamic than satisfaction. Satisfaction is the outcome of the evaluation a consumer makes of any specific transaction.

Baron et, al. (2003) also discuss that in measuring perceived service quality the level of comparison (that is, expectation) is what a consumer *should* expect, whereas in measures of satisfaction the appropriate comparison is what a consumer *would* expect. On the other hand, Parasurman et,al. (1988) maintain that customer satisfaction is distinct from service quality. Satisfaction is thought to result from the comparison between predicted service and perceived service, whereas service quality refers to the comparison between desired service and perceived service.

Customer satisfaction or dissatisfaction is the outcome of providing value that meets or doesn't meet the customer's need in that situation. Service quality must be measured as antecedent to both customer value and satisfaction, measure the value perceived by customers during usage, and measure the satisfaction or dissatisfaction that is the realized end state(Oakland,2006). Saxena (2002) also added that customer satisfaction is a function of customer expectation from the firm and the actual performance by the firm. Expectations shape a customer's perception of the product / firm's performance. Thus,

Customer satisfaction = Actual performance by the firm/Customers expectations

2.2.6 Methods of Measuring Service Quality

Service companies spend substantial time and resources on measuring and managing customer satisfaction, customer loyalty and service quality. They should identify and regularly measure critical elements of customer service against performance standards. Differences between standards and performance should form the basis for modifying customer service. Gilmore (2002) discusses that Measurements need to take account of different types of concepts and customers. Indeed, different measurement criteria are required for different concepts such as service quality, customer satisfaction, customer perceptions, expectations and loyalty. Assessment of these concepts will also entail the use of different measuring scales, and scope of opinions, attitudes and behavior. The following are two of the methods used to measure service quality in this study.

Gap Model

According to Parasuraman et, al. (1985) cited in Kumar (2008), service quality is a function of the gap between customers' expectations of a service and their perceptions of the actual service delivered by the organization. They suggested that this gap may be influenced by other gaps which may occur in the organizations. By support of the concept, Kotler et, al (2009) dictate the five gaps influencing service quality as;

- **Gap 1:** Consumer expectations - management perceptions of consumer expectations.
- **Gap 2:** Management perceptions of consumer expectations-service quality specifications actually set.

- **Gap 3:** Service quality specifications - actual service delivery.
- **Gap 4:** Actual service delivery - external communication about the service.
- **Gap 5:** Gaps 1-4 together contribute to consumers' expectations and perceptions of actual service.

Servqual

As competition becomes more intense and environmental factors become more hostile, the concern for service quality grows. If service quality is to become the cornerstone of marketing strategy, the marketer must have the means to measure it. According to Ramasawamy et, al. (2002) the SERVIQUAL model provides a reliable methodology for measuring customer satisfaction in a service situation. It seeks to measure perceived service quality on the basis of five parameters. Kotler et,al. (2006) also agree with the idea and suggest the following SERVQUAL attributes in measuring perceived service quality.

- *Tangibles:* the appearance of firm's physical facilities, equipment, personnel and communication material.
- *Reliability:* the firm's ability to provide the service dependably and accurately.
- *Responsiveness:* the firm's willingness to help customers and its ability to provide prompt service.
- *Assurance:* the employees' knowledge, competence, courtesy and ability to inspire confidence in customers.
- *Empathy:* the individual attention the firm provides to its customers, including access, communication and caring.

Gilmore (2003) also added that SERVQUAL is based on measuring customer satisfaction in terms of the relationship between expectations (E) and outcomes (O). If the outcome (O) matches expectations (E), then the customer is satisfied. If expectations (E) exceed the outcome (O), then customer dissatisfaction is indicated. If the outcome (O) exceeds expectations (E), then customer 'delight' may be the result. Other writers like Mudie et.al. (2006) propound that awards and certification are granted to companies who meet certain criteria in respect of standards. Additionally, there are programs such as Total Quality Management (TQM) which companies can adopt. In contrast to external monitoring and the development of universal standards, SERVQUAL is a technique that purports to measure the customer's view of quality at the level of a specific service organization.

2.2.7 Conceptual Framework

The conceptual framework (Figure 3) elucidates the underlying process, which is applied to guide this study. As discussed above, the SERVQUAL model is suitable for measuring service quality and customer satisfaction using the service quality dimensions. In order to know the perceived service quality, customers' service perception and expectation will be measured using service quality dimensions. And finally, the perceived service quality indicates level of customer satisfaction.

The general idea from the past literature is that there is a relationship between customers' satisfaction and service quality; also that service quality could be evaluated with the use of five service quality dimensions and the most useable is the SERVQUAL scale.

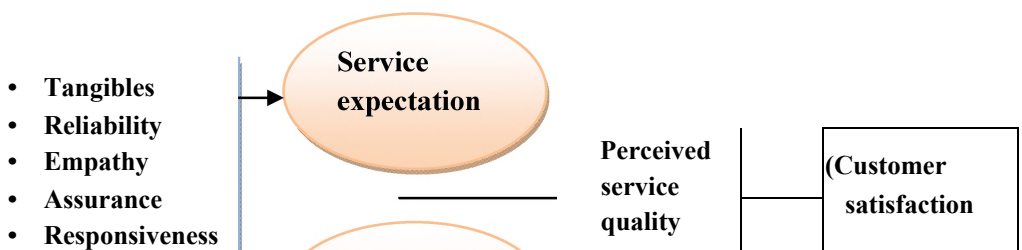


Figure 3. Conceptual Framework of the Study

3. Research Methods

Since the major purpose of this study is to evaluate industrial customers' satisfaction on service quality, a descriptive method of research design was used to achieve the research objective. Data sources used in this research were both primary and secondary. Primary data were collected from industrial customers found in south Addis Ababa region. The sources of secondary data were from published and unpublished materials like newsletters, manuals, magazines, and annual reports.

The population of the study is industrial customers that are found in South Addis Ababa region. There are 1993 industrial customers in South Addis Ababa Region and were selected using simple random sampling. Simple random sampling is used when the population is uniform or has similar characteristics. Since the study deals with industrial customers and presumed to have similarity on level of satisfaction on service quality, the researchers believed that simple random sampling is appropriate.

Many pieces of research seem to choose a sample size merely on the basis of what 'looks' about right, or what similar studies have used in the past, or perhaps simply for reasons of convenience (Fox et, al., 2009). Considering the above theoretical concept and level of dispersion and variance of the

study population, the sample size is determined using the following formula as it stated by Yamane (1967) cited in Israel (1992).

$$n \sim \frac{N}{1 + N\{ef\}} \quad \text{Where: } n \text{ - designates the sample size the research uses.}$$

N - Designates total number of industrial customers in south Addis Ababa Region

e - Designates maximum variability or margin of error 5% (0.05).

1 - Designates the probability of the event occurring.

The total number of industrial customers under South Addis Ababa Region comprises of 1072 from regional office, 607 from Akaki area, 221 from Debre zeiet, and 93 from Dukem. A total of 1993 industrial customers are found in the region and using the formula the sample size obtained as:

$$n = \frac{N}{1 + N(e)^2} = \frac{1993}{1 + 1993(0.05)^2} = 333 \text{ customers}$$

Based on the formula by Yemane (1967), 333 sample respondents among the total of 1993 industrial customers were taken as sample size. These customers were selected through simple random sampling technique from their list and filled out the questionnaire. The other population of the study is front line managers who have sufficient knowledge about factors that affect customer satisfaction and quality gaps and were selected through purposive sampling. In purposive sampling, we sample with a purpose in mind. We usually would have one or more specific predefined groups we are seeking (Trochim et.al., 2007).

Service quality is viewed as a multi-dimensional concept. Consumers assess and evaluate a number of factors or dimensions. Gaps Model of Service Quality gave rise to SERVQUAL, a self-administered questionnaire

purported to be a generic measure of service quality (Muddie et, al., 2006). The instrument used in this study was structured questionnaires based on the five dimensions of service quality (tangibility, assurance, reliability, responsiveness and empathy) and at the same time it used the seven point Likert scale from 1 strongly disagree to 7 strongly agree that adopted from Parasuraman et al., (1990). Since both expectation and performance were measured using 22 parallel questions, 44 questions in total were used besides demographic questions. In addition, interviews were also conducted with frontline managerial staffs.

The data gathered were organized by editing and using tables and figures. Both Quantitative and qualitative methods of data analysis were employed. The data collected from primary and secondary sources through interview, questionnaires and documentation search were analyzed through relevant statistical techniques of MS-EXCEL spread sheet, and SPSS. Finally, the data was presented through tables, percentage calculation, and different graphs.

4. Results & Discussion

Questionnaires were distributed to industrial customers found in south Addis Ababa Region, particularly in Akaki, Dukem, and Debrezeit areas. Simple random sampling was used to choose the sample. Of the 333 surveys individually administered, 267 questionnaires were received at a response rate of 80.2%.

4.1 Profile of Respondents

The demographic information enabled to have a better understanding on the respondents and the topic. About 63.7% respondents were male and the remaining 36.3% were female. From this, it can be easily understood that the respondents' gender distribution has been dominated by male. Majority of the respondents, 117(43%) were between the age of 31-40, 83(31.1%) found in less than 30 age category. The remaining 45(16.9%), and 22(8.2%) of respondents were between 41-50, and greater than 51 respectively. From the survey, it can be conclude that most industries in the region have been represented by youngsters.

As far as educational background of the respondents is concerned, 136(50.9%) of the respondents were first degree holders followed by diploma, 57(21.3%). 33(12.4%), 23(8.6%), 15(5.6%), and 3(1.1%) of the respondents were under masters, advanced diploma, less than diploma, and PhD educational levels respectively. Most industries have been represented by first degree holders and diploma holders. This may give employees to get experience in operation of industries though some industries need graduate level qualification for more expertise.

Majority of the respondents, in which case 79(29.6%) earned between 2501 - 4000, followed by 57(21.3%) who earned above birr 10,000 monthly. On the other hand, 50(18.7%) and 34(12.7%) of the respondents lie under birr 4001 - 7000 and birr 1500 - 2500 income category at monthly basis respectively. The remaining 32(12.0%), and 15(5.6%) earned between birr 7001 - 10000 and less than birr1500 at monthly basis following one another. The study clearly shows that monthly incomes of respondents vary from a few (6%) less paid to well paid (21%). This implies that the presence of small to large scale industries vary in volume of operation and ability to pay. Majority of, 140(52.4%) of respondents pay less than birr10,000 for

monthly electricity bill. 60(22.5%) of them consume between birr 10,001 - 50,000 monthly. On the other hand, 30(11.2%), 20(7.5%), and 17(6.4%) of the respondents had monthly electric consumption of 50,001 - 100,000, birr 100.001 - 200,000, and above birr 200,000 respectively.

4.2 Empirical Descriptions

The SERVQUAL model proposed by Parasuraman et, al. (1988) was used as the main guide for the structured questionnaire where data was collected on industrial customers' expectations and perceptions of service quality. The 5 dimensions (reliability, responsiveness, tangibles, empathy, and assurance) of SERVQUAL were in use both to service expectations and service perceptions. The respondents were to provide answers on their expectations and perceptions based on the 7- scale Likert scale 1- strongly disagree and 7- strongly agree. As specified in SERVQUAL model the 22 statements are sub divided in to two parts; the first part seeks to measure the expectations and the second part perceptions of industrial customers.

4.2.1 Service Expectations and Perceptions

Customers' standpoint of service quality is an important indicator of utility performance. It provides feedback to the utility and, at the same time, can be used for enabling the customers to influence sector performance. Specifically important is information from customers about objective characteristics of service quality as opposed to customer perceptions. Since industries are the corner stone of industrialization program of the country, assessment of satisfaction level has pivotal role in diagnosing the quality gaps.

Measuring Service Quality on SERVQUAL

The data pertaining to the five dimensions of the SERQUAL was calculated by using the following steps to find the service quality gap and over all service quality:

- Expectations and perceptions were both measured using the 7-point Likert scale whereby the higher numbers indicate higher level of expectation or perception. In general, customer expectation exceeded the perceived level of service shown by the perception scores. This resulted in a negative gap score (Perception - Expectation). According to Parasuraman et al., (1988), it is however common for customer's expectation to exceed the actual service perceived and this signifies that there is always need for improvement. The items with the highest expectation scores were need for modern equipments (6.4), sincere interest in solving customer's problem (6.3), and keep customers' records accurately. However, other items in all the 5 dimensions are not very far from scores of the remaining items.

Table 1. Overall Average SERVQUAL Gap Score

Dimension	Statement	Expectation Score	Perception Score	Gap Score	Average for Dimension
Tangibles	1. Ethiopian electric power corporation customer service centers should have modern equipments	6.4	3	-3.3	-3
	2. The physical facilities should be visually appealing.	6.1	3	-3.1	
	3. Their employees should be well dressed and appear neat.	6.2	3.4	-2.8	
	4. The physical environment of the customer service centers should be clean	6.2	3.4	-2.8	
Reliability	5. When EEPCCo promise to do something by a certain time, it should do so.	6.2	3	-3.2	-3.2
	6. When a customer faces a problem, EEPCCo should show a sincere interest in solving it	6.3	3	-3.3	
	7. EEPCCo should perform the service right from the beginning.	6.1	3.1	-3.1	
	8. EEPCCo should provide its services at the time it promise to do so.	6.2	3	-3.3	
	9. It should keep its records accurately	6.3	3.3	-3	
Responsiveness	10. Employees should make information easily obtainable by the customers.	6.2	3.2	-3	-2.9
	11. Employees should give prompt service to customers.	6.2	3.3	-2.9	
	12. Employees are always willing to help customers	6.2	3.3	-2.8	
	13. Employees in EEPCCo should never be too busy to respond to customers' requests	6.1	3.1	-3	
Assurance	14. The behavior of employees in EEPCCo should instill confidence in customers	6.1	3	-3.1	-3
	15. Customers should be able to feel safe in their transactions with employees in EEPCCo.	6.1	3	-3.1	
	16. EEPCCo employees should be polite	6	3.2	-2.8	
	17. Employees of EEPCCo should have the knowledge to answer customers' questions.	6.2	3.3	-2.9	
Empathy	18. EEPCCo should give customers individual attention.	6.1	3.1	-3	-3
	19. Its operating hours should be convenient to all its customers.	6.1	3.4	-2.7	
	20. Employees should give customers personal service.	6	3	-3	
	21. It should have its customers' best interest at heart	6.2	3.1	-3.1	
	22. The employees should understand the specific needs of their customers.	6.2	3.3	-2.9	
Overall average SERVQUAL gap score:					-3.0

Source: Field survey, January 2014

- The highest rated items for actual service perceived were, employees are well dressed and appear neat (3.4), the physical environment of the customer service centers are clean (3.4), the operating hours are convenient to all its customers (3.4). There is no much difference between the scores of perceptions but are generally much lower than expectations. The gap scores are the difference between the perception and expectation scores with a range of values from -6 to +6 and these gap scores measure service quality and hence customer satisfaction. The more perceptions are close to expectations, the higher the perceived level of quality. The largest gaps scores were EEPCo has up-to-date equipments (-3.3), sincere interest in solving customer's problem (-3.3), EEPCo provide the service at the time it promised to do so (-3.3). On the other hand, the smallest gap score was at the convenience of operating hours to all its customers (-2.7).

As seen from the survey, all features of the service quality dimensions require a great attention so as to guarantee the expected level of satisfaction. Because of the strong reliance on people in all aspects of the service delivery and most of the dimensions in SERVQUAL scale used in the study focus on employee behavior and relationship with customers, EEPCo staffs are not in a situation to provide both formal and informal means of communication with industrial customers. Employees are not sure of the nature of their job and be clear about the duties, role and responsibilities involved. If this is the case they will not have a full understanding of the job and so will be unable to perform it well or will lack confidence to do it well. Generally, significant gap was observed in industrial customers' expectation and perception. This show, customers expect very high performance from the corporation's service delivery.

As stated in table 2 below, responsiveness, tangibles, and assurance has the highest mean for service perception. At the same time, reliability, tangible, and assurance have the highest mean for service expectation. The standard deviation is almost uniform for all dimensions except for assurance (1.38), and empathy (1.26) in both situations. Furthermore, average perceptions range from 3.08 to 3.24 and the standard deviation has also similar trend as service expectations. It can be seen that standard deviation scores are fairly consistent for all five dimensions and suggested a wide range of opinion on service quality among the respondents surveyed.

Table 2. Average Score for Perception and Expectation

	Tangible		Reliability		Responsiveness		Empathy		Assurance	
	P	E	P	E	P	E	P	E	P	E
Mean	3.23	6.23	3.08	6.24	3.24	6.17	3.19	6.16	3.12	6.23
SD	1.13	1.05	1.11	1.12	1.22	1.23	1.26	1.24	1.38	1.05
Skewness	0.41	-2.51	0.66	-2.57	0.62	-2.75	0.48	-2.47	0.52	-2.51
Minimum	1.00	1.50	1.00	1.00	1.00	1.25	1.25	1.00	1.25	1.50
Maximum	6.50	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00

P*= perception E*= Expectation

Gap Scores Analysis

The gap signify the overall gap of (-3) with each of the SERVQUAL dimensions: tangibles (-3), responsiveness (-2.9), reliability (-3.2), assurance (-3), and empathy (-3). The concept of measuring the difference between expectations and perceptions in the form of the SERVQUAL gap score proved very useful for assessing levels of service quality. Parasuraman et al., (1988) argue that, with minor modification, SERVQUAL can be adapted to any service organization. They further argue that information on service quality gaps can help managers diagnose where performance improvement can best be targeted.

The largest negative gaps, combined with assessment of where expectations are highest, facilitate prioritization of performance improvement. There is no a single gap score in some aspects of service that turns out to be positive, implying expectations are actually not just being met but exceeded sending a message to EEPCo managers to review whether they may be "over-supplying" this particular feature of the service. On the other hand, all features of the service quality dimensions indicate that the expectations are not yet met and EEPCo needs to re-deploy resources into features which are underperforming. Thus, it is clearly seen that industrial customers are very dissatisfied with the current service.

Table 3. Mean Score for Service Quality Dimensions

	Tangible	Reliability	Responsiveness	Empathy	Assurance
Mean	-3.00	-3.16	-2.93	-2.97	-3.10
SD	0.09	0.00	-0.01	0.03	0.33
Skewness	2.92	3.23	3.37	2.95	3.03
Minimum	-0.50	0.00	-0.25	0.25	-0.25
Maximum	-0.50	0.00	0.00	0.00	0.00

In general, it was found that industrial customers' perceptions of service quality offered by EEPCo did not meet their expectations. All gaps scores had negative value indicating that expectations couldnot be met. Dimensions that reported larger mean gaps were reliability (-3.16), assurance (-3.1) and tangibles (-3.0) whereas responsiveness and empathy have a mean value of (-2.97), and (-2.93) respectively.

These values show that the perception of performance in EEPCo is less than the expected level of service quality. A service encounter should be given considerable attention because a single interaction can affect a customer's total perception of the corporation since the average difference of almost all dimensions related to service interactions reflect a negative gap.

Discussion of Dimensions' Results

In order to assess the service quality performance, the five dimensions of service quality were used.

Tangibles

Tangibles encompass the appearance of the company representatives, facilities, materials, and equipment. The findings show that it has a significant impact on industrial customers' satisfaction. It signifies that the physical environment should be clean, facilities to be visually appealing, and district service centers should have modern equipments. In this regard, limitations have been observed with regards to the physical facilities like: insufficient and poor design of office, furniture and equipment, shortage of heavy and light duty truck machineries for operation activity, absence of e-mail facilities etc. Moreover, inappropriate conductor size in the distribution system, poor quality of construction, lack of maintenance, transformer overloading, phase imbalance, extended outage times under fault condition, high system losses and poor safety which affected industrial customers in the region.

The interview also showed that despite the relation of most industries in few industry zones, several others found with commercial and domestic customers and share similar distribution network. This has contributed for the frequent unplanned power interruption and delay in maintenance. It further entailed that even though industrial customers need special attention, while in the case of EEPCo attractive work environment has not yet been created. There are several reasons behind; for most service centers are acquired by rent and do not conform to the designed lay out, and unable to replace outdated office equipment due to financial problem, and the

like. Both results from interview and questionnaire indicated that there is high demand for the items in the tangibility dimension and the actual service received has several defects.

Reliability

Ensuring reliability has and will continue to be a priority for electricity industry expansion. Reliable electric power delivered on demand is a cornerstone of electricity's everywhere adoption and use. A central feature in electricity's value to consumers, whether they are individual households or large industrial complexes, is the infrequent occurrence of interruptions or other power disturbances that interrupt the use of appliances, motors, electronics, or any of the other myriad of end users for which electricity is the primary energy source.

As statements under reliability dimension indicated, there is high service expectation than perception, which leads to a negative gap. Power disruptions have serious economic impacts. A study by Ethio-resource group (2009) estimates the lost output due to a one-day power cut to be 10% to 15% of that day's GDP. But what may be even more detrimental is the fact that these frequent power cuts portray infrastructure services in Ethiopia to be unreliable discouraging both local and external investment. Hence, reliability dimension of SERVQUAL needs major improvement to be the prominent factor for industrial sector.

Responsiveness

Responsiveness is the timely reaction towards the customers' needs. Once again, this result shows that industrial customers need special attention with regards to information accessibility, the prompt service being received, and willingness of employees of the corporation to help customers. Even so,

human responsiveness sometime can be affected by emotion, which causes low productivity.

The Ethiopian power sector is small even by African standards. Per-capita power and energy available for Ethiopians is significantly lower than many African countries. According to the World Bank report (2009) National electricity access (meaning the population that is within reach of low-voltage distribution lines) is 22% and actual customer connection is only about 15%; rural customer connection is less than 5%. There also exists a large room for improvement in the area of customer services in minimizing connection time, reconnection time, customer complaint handling and billing.

Assurance

Assurance is mean of being safe, the responses state that the customers do not feel assurance is being important as part of the service quality that should be included. Although industrial customers show a higher need towards assurance expectation, the actual service has been found to be very problematic. On the other hand, the interview result justifies that there is no much special place for industrial customers in terms of care, emphasis and treatment despite their being the back bone of Ethiopia's industrialization scheme. It further showed that front line employees engaged in customer service have the required knowledge, and take care of their customers and give prompt service. However, absence of due care and attention EEPCo gives to its employees, absence of continuous human resource development, low level motivation and benefit packages, shortage of the required materials used for power distribution construction would contribute employees to be less sensitive to customers' requests.

The employees have not yet been made to own the system through adequate training and capacity-building programs. Moreover, inadequate motivation scheme made them not to be polite and couldnot instill confidence in customers.

Empathy

The results of the research suggest that there is a need for improvement in all the items under this dimension. Gaps have identified in giving customers individual attention, working hour convenience, understand the specific needs of customers. Apart from this, there are occasions that customers are forced to resort to the conventional way of by queuing up at tellers during bill payment hours. As it is human nature, people tend to expect empathy and respect from someone who they wish to deal with. Technology provides the platform to mitigate the problem of workloads and error, provide a more efficient and quick problem solving solution. Yet, EEPCo service centers have to maintain and improve empathy skills since personal contact is still very important.

Overall Perceived Service Quality and Industrial Customers' Satisfaction

As discussed in the literature part, customer satisfaction is measured in terms of the relationship between expectations(E) and outcomes(O). If the outcome(O) matches expectations (E), then the customer is satisfied. If expectations(E) exceed the outcome(O), then customer dissatisfaction is indicated. If the outcome(O) exceeds expectations(E), then customer 'delight' may be the result. However, in all the SERVQUAL dimensions, EEPCo's industrial customers' service showednegative gap since service perceptions are far apart from service expectations. In other words, in the case of EEPCo there is evidence of disappointing results in service delivery

process. Service expectations of industrial customers have been found very high, and perceptions became poorly rated. As a result, in all dimensions of SERVQUAL EEPCo's service were unsatisfactory. As the important contributor of the revenue, industrial customers of the region have not yet got the emphasis of the decision makers.

The interview results also justify that due to several problems around the corporation's service delivery process and resource limitations, total customer satisfaction has not yet been ensured. Although several attempts have been made since few years before, there are yet many problems to solve. The incompatibility between supply and demand, the overwhelming power demand by industries and unmet need, frequent power interruption, less responsiveness, distribution materials supply constraint, less commitment are some of the problems at hand.

5. Conclusions And Recommendations

This final part of the article provides generalizations drawn from the main components of the research process, consequences, as well as possibilities towards solving the observed problems related to industrial customers of the region.

5.1. Conclusions

Customers are increasingly aware and demanding, as well as increasingly engaged and active; resulting in the need for electric utility sector to better understand industrial customers' need. Particular attention has been given for industrial customers who contributed a great deal to industrial led economy. Ensuring service quality will play a major role in keeping the pace of industrialization and, therefore, the study made at industrial

customers of south Addis Ababa region showed that the service status of EEPCo is far below customers' expectation.

EEPCo's industrial customers' service show negative gap since service perceptions are far apart from service expectations. Industrial customers' perceptions of service quality offered by EEPCo did not meet their expectations. All gaps scores had negative value indicating that expectations couldnot be met. Dimensions that reported larger mean gaps were reliability (-3.16), assurance (-3.1); and tangibles (-3.0) whereas responsiveness and empathy have a mean value of (-2.97), and (-2.93) respectively. As the important contributor of the revenue, industrial customers of the region have not yet got the attention of the decision makers. It should be noted that creating an industry led economy is one of the strategic issues that the government of Ethiopia hasempresedsince decades before. Such plans can only be achieved through providing quality service on the side of the public electric utility provider, EEPCo.

Due to the strong reliance on people in all aspects of the service delivery and most of the dimensions in SERVQUAL scale used in the study focus on employee behavior and relationship with customers. However, EEPCo staffs are not in a situation to provide both formal and informal means of communication with industrial customers. Employees are not sure of the nature of their job and be clear about the duties, role and responsibilities involved. If this is the case they will not have a full understanding of the job and so will be unable to perform it well or will lack confidence to do it well.

5.2 Recommendations

Based on the findings from the study on industrial customers of south Addis Ababa region the following recommendations are forwarded.

- By improving customer service and becoming a trusted supplier, rather than a background entity that only filters into the customer's consciousness when something goes wrong, EEPCo should start to develop strong customer relationships by creating personal relationships, customer intimacy, integrated information system, and continuous relationship that will encourage long-term devotion, prompt service so as to enhance customer satisfaction. In short, make the system fully customer-centric approach; one in which the customer becomes the focus of the entire business.
- Assessing service quality and better understanding on how various dimensions affect overall service quality would enable EEPCo to efficiently design the service delivery process. By identifying strengths and weaknesses pertaining to the dimensions of service quality, EEPCo should better allocate resources to provide better service and ultimately bring better satisfaction to its industrial customers. Moreover, since customers' expectations change over time, it is necessary to contact industrial customers regularly and assess their service experiences. With the knowledge of the service quality dimensions, EEPCo should judge how well employees performed on each dimension and decision makers could identify the weakness in order to make improvements.
- Meeting industrial customers' demand to turn challenges into opportunities requires transformation of the traditional electric utility business model. Delivering safe and reliable electricity will always form the foundation of what we do, but the modern utility must expand its vision and adapt to changing circumstances in order to provide energy sustainably for customers, communities and shareholders. Thus, as part of managing service quality, EEPCo

should design and incorporate innovation in the current service delivery processes as well as operate an ongoing quality improvement program like identifying quality priorities, reviewing performance and reporting system that will monitor the level and consistency of service quality.

- Implementing service delivery successfully entails working towards having a consistent level of service delivered by relatively motivated staff and management who focus on satisfying employees and stressing their importance to the success of the corporation. To do this, the corporation should respond to their needs and reward their efforts. If this occurs employees will be more motivated towards satisfying customers. Equally, employees need to understand how their job contributes to the customers' experience and if they are given the latitude to do their job precisely in the way that will most please customers, their job performance becomes a matter of personal reward. Furthermore, the design of the physical service environment is important to both customers and employees who dwell frequently on a service environment. Thus, the environment should be comfortable both in the eyes of customers and employees.

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