

**"CUSTOMERS' PERCEPTION OF SERVICE QUALITY IN A  
DECENTRALISED SYSTEM IN THE PUBLIC UTILITY  
SECTOR IN KENYA: THE CASE OF KENYA POWER AND  
LIGHTING COMPANY LIMITED //**

**By**

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D61/P/8521/00**

**A MANAGEMENT RESEARCH PROJECT SUBMITTED IN PARTIAL  
FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF A  
DEGREE IN MASTERS OF BUSINESS ADMINISTRATION (MBA),  
FACULTY OF COMMERCE, UNIVERSITY OF NAIROBI**

**UNIVERSITY OF NAIROBI**

**September, 2003**

# DECLARATION

This Management Research Project is my original work and has not been submitted for a degree in any other University.

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## ACKNOWLEDGEMENT

I would like to express my special thanks to my supervisor, Mrs. Margaret Ombok for her invaluable support and insightful contribution that have enriched the results of this study. Her vast knowledge of the discipline of Marketing, her interest, advice and details served to enrich the quality, scope and content of this study.

**To my Late Dad, Laban**  
**Whose love for Education was beyond reach!**

My appreciation is also extended to the Kenya Power and Lighting Company Limited for facilitating this study and providing the field of study in my Research.

Profound thanks and appreciation go to my family **and** for their unflinching support. To Esther, Isaac, Faith and Joy, you were a true source of my inspiration and moral support. Your patience for me was of tremendous value and has borne the worthy fruits. I will eternally be grateful to you.

To the Lecturers of the faculty of Commerce who were involved in the noble task of imparting knowledge and to all my colleagues, I would like to express my sincere and grateful appreciation. I would like to thank each and everyone of you. It was a privilege to know and work with you. I would like to thank those who assisted me in one way or another, during the programme and in typing various reports. I appreciate. I cannot fail to acknowledge and appreciate every bit of assistance by especially David Chelufi, the Kagombes, Kungu Waveru, Petronilla Irvine and Churchills, to mention just a few.

**To, The rest of my family**  
**Your inspiration was not in vain**

To the Almighty God, I say thank you.

"Your grace has been sufficient for me and your mercy new every morning"

# ACKNOWLEDGEMENT

Page

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2.2 Decentralization of services	13
2.3 Customer service	14
2.4 Service Quality	15
2.5 Perception and Perceived Quality	16
2.6 Evaluation of Service Quality	17
2.7 Service Quality Models	18
2.8 SERVQUAL (Service Quality) and service Gaps	21
2.9 Determinants of service Quality	24
2.10 Measurement of Service Quality	29

Declaration.....	ii
Dedication.....	iii
Acknowledgement.....	iv
Table of Contents.....	v
List of Appendices.....	vii
List of Tables (Data Analysis and Findings).....	viii
Abstract.....	ix

## CHAPTER FOUR

## CHAPTER ONE

1. INTRODUCTION.....	1
1.1 Background.....	1
1.2 Role of Service Quality.....	2
1.3 The Public Utility Sector in Kenya.....	3
1.4 Background of the Kenya Power and Lighting Company Limited (KPLC).....	4
1.4.1 Historical Background .....	4
1.4.2 Energy Sector Reforms and consequential changes in KPLC.....	5
1.5 Statement of the problem .....	7
1.6 Objectives of the study.....	9
1.7 Importance of the study.....	9

## CHAPTER TWO

2. LITERATURE REVIEW.....	10
2.1 Restructuring as a strategic change .....	10
2.2 Decentralization of services.....	13
2.3 Customer service.....	14
2.4 Service Quality.....	15
2.5 Perception and Perceived Quality.....	16
2.6 Evaluation of Service Quality.....	17
2.7 Service Quality Models.....	18
2.8 SERVQUAL (Service Quality) and service Gaps.....	21
2.9 Determinants of service Quality.....	24
2.10 Measurement of Service Quality .....	26

**CHAPTER THREE**

**LIST OF APPENDICES**

**3. RESEARCH METHODOLOGY**

3.1 Research Design..... 29

3.2 The population..... 29

3.3 Sample Frame..... 29

3.4 Sample and Sample Design..... 29

3.5 Data Collection Methods..... 31

3.6 Operationalizing the service quality dimensions ..... 31

3.7 Data Analysis Techniques..... 33

**CHAPTER FOUR**

4. DATA ANALYSIS AND FINDINGS..... 35

4.1 Measures of Customers' expectations of service..... 37

4.2 Perceived service Quality..... 38

4.3 Perceived service quality of the various categories of customers..... 40

4.4 Management's Perspective of service quality viz-a-viz the research findings..... 43

**CHAPTER FIVE**

5. DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS..... 45

5.1 Discussion..... 45

5.2 Conclusions..... 47

5.3 Recommendations..... 48

LIMITATIONS OF THE STUDY..... 49

SUGGESTIONS FOR FURTHER RESEARCH..... 50

REFERENCES..... 51

APPENDICES..... 53

## LIST OF APPENDICES

Appendix 1	:KPLC's letter certifying that survey study was not carried out during the at Restructuring program.....	53
Appendix 2	:Key Performance Indicators and targets of KPLC.....	54
Appendix 3	:Service quality determinants included in the KPLC's performance targets .....	55
Appendix 4	:Zonal Structure after Restructuring/Decentralization of services.....	56
Appendix 5	:Area Structure before Restructuring/Decentralization of services.....	57
Appendix 6	:KPLC's Segmentation of Customers (from the July, 2003 billing list)....	58
Appendix 7	:Customers' Questionnaire .....	59
Appendix 8	:Formulae for calculating variables of service quality dimensions.....	63
Appendix 9	:Data analysis- Scores sheet (All customers) .....	64
Appendix 10	:Data analysis – Service quality variables (All customers).....	65
Appendix 11	:Data analysis- Scores sheet (Domestic customers).....	66
Appendix 12	:Data analysis – Service quality variables (Domestic customers).....	67
Appendix 13	:Data analysis- Scores sheet (Small commercial customers) .....	68
Appendix 14	:Data analysis – Service quality variables (Small commercial customers)...	69
Appendix 15	:Data analysis- Scores sheet (Large commercial customers) .....	70
Appendix 16	:Data analysis – Service quality variables (Large commercial customers)...	71

# LIST OF TABLES

(Data Analysis and Findings)

Table 4.1	: Response rate of the targeted sample of customers.....	35
Table 4.2	: Proportionate durations of customers' stay with KPLC.....	36
Table 4.3	: Service Quality dimensions and their relative importance.....	37
Table 4.4	: Computed Quality Gaps of the service quality dimensions.....	39
Table 4.5	: Computed Service Quality Gaps of the different categories of customers.....	41
Table 4.6	: Management's perspective in the area of service quality dimensions.....	42



## ABSTRACT

In Kenya and world over, service quality is being used as a strategic tool to cut a competitive edge in the market place. Banks, supermarkets, merchant ventures, hospitality industry, to mention just a few, have widely used the service quality as a differentiation variable for competitive advantage. In the utility industry, de-regularization and, therefore, competition has dominated the marketing environment and service quality is therefore, a necessary evil.

The objectives of this study were to investigate the expectations and perceptions of different categories of Kenya Power and Lighting company Limited (KPLC) customers and the management's perspective of service quality following decentralization of services within a restructuring program.

To achieve these objectives, samples of different categories of 306 customers were picked and administered with questionnaires that had both semi structured and likert matrix questions. The customers were randomly and conveniently chosen from amongst those visiting KPLC offices and others were visited in their premises.

The data collected was analysed using proportions, percentages, means, standard deviations and coefficient of variation. Graphical displays were used to amplify the comparative analysis.

Analysis of data indicated that the expected service quality on all the ten dimensions, used in the study, is relatively high with a generally high level of agreement on their importance amongst all the respondents. The received service quality is generally lower than the expected service resulting in a relatively high service quality gap of about 18%. This service quality gap is fairly similar amongst the different category of customers but reduces progressively from domestic, small commercial towards the large commercial customers. KPLC management's performance targets relating to service quality were found to have only covered a scope of about 40% within the wide arena of all the service quality dimensions.

On the basis of the study, several recommendations were deemed appropriate for KPLC and the utility industry at large, that is, to undertake: - enhancement of the use of marketing research and customer survey studies, especially when undertaking customer service enhancement programs, this will throw light to the customers' expectations of service and the perceived service quality, and thus lead to effective programs in addressing the areas of need; enhancement of commitment

to service quality; enhancement of empowerment of service personnel in close proximity to customer service; and, enhancement of effective communication amongst organisations' divisions of operations, human resources and marketing, research & development, e.t.c.

### 1.1. Background

The major constraints and hence the limitations of the study was lack of discrimination of customers' perceptions on the basis of income levels and education, factors which could affect the results. Besides, the study relied on customers' judgments of perceptions, which are subject to cognitive biases.

It was suggested that other areas of further study could be undertaken in order to address the above limitations, especially on finding out: - whether there are significant differences in expectations and perceptions with respect to classification of customers on the basis of incomes, level of education and awareness; whether differences in the degree of need for electricity, telephone and water services could reveal any significant differences in expectations and perceptions; and also study the relevance of the postulates of the P-C-P model to the ten service quality dimensions used in this study.

Charles and Gerth (1998) define strategic change as "the movement of a company from its present state to increase its competitive advantage". Most of these companies have been pursuing one or a combination of the three major kinds of strategic change - re-engineering, Restructuring, and Innovation. In recent years, reducing the scope of companies through restructuring has become an increasingly popular strategy particularly among the companies that diversified their activities in 1960s, 1970s and 1980s during the heydays of corporate diversification.

Charles and Gerth (1998) say that, in most cases companies that are engaged in restructuring are divesting themselves of diversified activities in order to concentrate more effectively on their core business. In the last decade, competitive forces have led these diversified companies to pursue restructuring as a strategic change. Restructuring of the organizations has mainly focused on reduction of levels of hierarchy from tall to flatter and leaner structures; downsizing by reducing the number of employees to reduce operational costs and emphasis on designing the organizational structure around the activities which the efforts of building a competitive advantage.

The global forces driving restructuring activities have not spared Kenyan firms. The main forces have been: the need to attract customer pressure for better value of products, fast growing information technology, drive pressure for improved financial performance, changes in Government legislation and Government policy of encouraging private sector participation.

## CHAPTER ONE

### 1. INTRODUCTION

#### 1.1 Background

The power of information technology, deregulation, changes in legislation, globalization of markets and stiff competition has made consumers more educated, more inquisitive and demanding (Capron and Holland, 1999 as quoted by Mbau, 2000). The marketing environment has, therefore, changed posing serious challenges to the survival and profitability of firms (Mbau, 2000). According to Charles and Gareth (1998), in today's global environment, change rather than stability is the order of the day; Rapid changes in technology, competition, and customers' demands have increased the rate at which companies need to alter their strategies and structures to survive in the market place.

In their strategic response to these imperative changes, companies have had to seek to strengthen their existing core competencies and build new ones in order to compete more effectively by going through a strategic change. Charles and Gareth (1998) define strategic change as "the movement of a company from its present state to increase its competitive advantage"; Most of these companies have been pursuing one or a combination of the three major kinds of strategic change – Re-engineering, Restructuring and Innovation. In recent years, reducing the scope of companies through restructuring has become an increasingly popular strategy particularly among the companies that diversified their activities in 1960s, 1970s and 1980s during the heydays of corporate diversification.

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The global forces driving restructuring activities have not spared Kenyan firms. The main forces these firms have been subjected to are; customer pressure for better value of products, fast developing information technology, donor pressure for improved financial performance, changes in Government legislation and Government policy of encouraging private sector participation,

to mention just a few. The above forces have had the effect of accelerated restructuring activities of most firms in Kenya, aimed at reduction of costs, enhanced level of customer service and building competitive positions within the globalized competitive environment

According to Charles and Gareth (1998), as firms undertake the strategic change in form of restructuring the customer who has had to be the focus has led the firms to pursue decentralization of services. They also explain that “when authority is decentralized, it is delegated to divisions, functions, managers and workers at lower levels in the organization”. This decentralization of services has therefore, been mainly earmarked towards empowerment of the low level staff who are in contact with the customer, so as to be able to make prompt decisions impacting on customer service. In addition, the decentralization of services effected by restructuring has had the effect of reduced levels of hierarchy in the organization. This way, the top management has been brought closer and more involved in customer service, for in this increasingly competitive environment, quality service is critical to corporate success (Lovelock, 1996).

## 1.2 Role of Service Quality

Though marketing developed, initially, as a discipline in connection with selling of physical products, as the economies have grown more and more complex, through the years, marketing has broadened to marketing of services. The most market changes in the structure of developed economies in the twentieth century, particularly in the latter half has been the transformation from emphasizing on the manufacture of physical goods to the production of intangible services (Rust et. al., 1996).

Today, service industries dominate the economy in the service sector and accounts for more than 85% of jobs and the number continue to grow. Quality improvement looms large in the ongoing services of this sector of our economy (Amitava, 1998, pp. 650). Service quality has been used as a viable strategy for marketers endeavoring to differentiate service offerings, establish customer value and ultimately satisfy consumer needs (Ozmet and Morash, 1994). The domain of service quality began in earnest in late 1970s with the realization by firms that competitive environment required proactive ways in order to remain competitive, profitable and successful. This revolution could be traced in part to a study of top performing companies, which drew attention to the efforts they were placing on ‘getting closer to their customers’.

Hellen (1995), says that the reasons of developing and delivering a quality service include: - organizations with a reputation for consistently high quality can sustain an enviable competitive

advantage in the service market place; quality is “free” – that is to say getting it right first time costs far less than providing remedies when services fail to meet the customer’s required standard; better quality services can attract premium prices and consumers are ready to pay a higher price for services that fulfill all their expectation criteria. Each of these reasons for putting quality first can have a direct impact on profitability, image and customer or user satisfaction.

According to Rust and Oliver (1994), the efforts of organizations to focus on service quality swathe dawn of service quality research in the late 1970s through 1980s. They observed that, arguably, the most significant pioneer in this field is Gronroos (1995) who established a research agenda for service quality by introducing the first comprehensive model of service quality. Parasuraman, et al, (1985) amplified the model and refined Gronroo’s framework and devised an influential service quality rating scale, which came to be referred to as SERVQUAL (Mwaura, 2002). Palmer (1992), identified five service Gaps that define shortfalls between expectation of service level and perception of actual services delivered.

Kotler (1997), summarized the determinants of service quality into five as follows: - reliability, responsiveness, assurance, empathy and tangibles (to be referred to as ‘generic dimensions’).

From focus group research, Zeithaml, Berry and Parasuraman (1985), identified ten criteria used by consumers in evaluating service quality. These ten dimensions which are an expansion of the above five generic ones are - **Reliability** (dependable, accurate performance); **Responsiveness** (Promptness and helpfulness), **competence, courtesy, credibility, security** (Assurance); **easy access, good communication, understanding the customer** (Empathy)); and **Tangibles** (appearance of physical elements).

### 1.3 The Public Utility Sector in Kenya

James et al. (2002), define public utilities as a group of firms, mostly in the electric power, natural gas, and communications industries that are closely regulated by one or more government agencies. The agencies control entry into the business, set prices, establish product quality standards, and influence the total profits that may be earned by the firms.

According to William (1961), utilities are usually vitally connected with public health or well being. This means to the socialist that these industries are not to be entrusted any longer than absolutely necessary to the profit seekers. Moreover, these industries in most cases are already organized on a monopolistic basis under exclusive franchises granted by the Government authorities. Their operations and rates have been regulated by government commissions with the

object of keeping their activities in line with public interest and their rates at about a cost-of-production level.

A unique feature of the companies providing these utility services is that they are nearly monopolies or oligopolies; The standards for quality are imposed by the regulatory agencies and consumers expect continuous, uninterrupted service from utilities; To obtain a rate increase, utilities have to address all relevant public criticism; and, the consumer controls the consumption and generates an instantaneous demand (Amitava, 1998).

The utility industry in Kenya is mainly dominated by the bodies that provide the services of water, electricity and telecommunications. These bodies are, various local authorities and national water and pipeline conservation for water; Kenya Power and Lighting Company Limited for electricity and Telkom Kenya Limited for the telecommunications. The corporate governance of these bodies are fairly similar and the nature of their services quite similar in the delivery process. Thus, the customers' requirements of the service quality by these bodies is similar. Though the focus of this study is the Kenya Power and Lighting Company Limited, the findings could be of use in these other utilities due to similarity of corporate governance, customers' demands and environment of operation.

## **1.4 Background of the Kenya Power and Lighting Company Limited**

### ***1.4.1 Historical Background***

The power industry in Kenya dates back to 1922 when the East African Power and Lighting Company Limited was incorporated, to generate electricity throughout Kenya. The Company changed its name to the Kenya Power and Lighting Company Limited (KPLC) through a special resolution by the Shareholders in 1983.

The Kenya Power Company (KPC) incorporated in 1954, Tana River Development Company (TRDC) incorporated in 1964, the Tana and Athi Rivers Development Authority established in 1974, and the Kerio Valley Development Authority established in 1979 were all set up to solicit for international funds and develop hydro power stations in their respective basins.

KPC constructed the line from Tororo to Nairobi to facilitate power import from Uganda whereby in July 1955, KPC entered into a 50 year Power supply agreement with Uganda Electricity Board (UEB). Also, KPC was to engage in developing other power generating facilities like the Geothermal sources in Naivasha. TRDC developed Kindaruma, Kamburu and Gitaru Power Stations in 1966, 1974 and 1978, respectively. TARDA developed Masinga and Kiambere in 1980 and 1988, respectively, while KVDA developed Turkwel Power Station in

1991. The Generating facilities of KPC, TRDC, TARDA and KVDA as well as the power assets of these authorities were managed by KPLC under various agreements with electricity being supplied in bulk, at cost, to KPLC which was the sole distributor of electricity throughout Kenya.

#### **1.4.2 Energy Sector Reforms and Consequential Changes in KPLC**

The Government of Kenya (GOK) developed a broad energy sector Reform strategy under its policy framework paper (1996-1998). Under this framework, and with the pressure of the international demand for liberalization, the sector underwent structural adjustment programs from 1997, whereby: -

- a) The Generating function was separated from the Transmission and Distribution functions.
- b) The Generating function was entrusted to KenGen, - a wholly Government owned power generation Company. KenGen owns and operates all public sector generation power stations. The Independent Power Producers (IPPS) also came on stream as private entrants in the sector to own, operate and sell power in bulk to KPLC.
- c) The energy policy, the rural electrification program, and the renewable sources of power generation i.e. wind, solar, mini-hydros and biomas were the responsibility of the Ministry of Energy of the Government of Kenya.
- d) The Kenya Power and Lighting Company Limited (KPLC) have the mandate to purchase power in bulk, transmit, distribute and supply electricity throughout Kenya.
- e) The Electricity Regulatory Board (ERB) was established by the electric power act, 1997, and has primary role of regulating the generation, transmission and distribution of electricity, promote and ensure competition in the sub-sector, approve contracts for generation and bulk sale of electricity and set/review electricity tariffs.

Besides, the above force of statutory sector reforms driven by the Government and multilateral donors, other forces that triggered imperative changes in KPLC included: - Customer demands for lower prices of electricity; Enhanced quality of service and other choices of competitive sources of energy (gas, wood, fuel Paraffin, solar, etc); Technological developments especially in the Information Technology (IT) area which has impacted on the speed, quality and timeliness of customer service – this necessitated change in the information management infrastructure especially in enhancing the speed of billing; Extending supply to vast potential market given that only 15% of the population is connected and High cost of private sector generation which eroded the Company's financial base leading to cash flow constraints.

In preparation for the above changes, KPLC embarked on a rigorous system/business, re-engineering exercise commencing in 1995 through an institutional strengthening project whose objectives were mainly to: - Make the organization more customer focused, establishing a one stop customer service and enhancing the billing process; Refocus the organization to its new mandate; Pursue the corporate vision and mission; Establish fully fledged business units; Optimize on use of resources and review and realign the business processes.

After the implementation of the institutional strengthening project, the business restructuring ensued so as to review the organization structure to suit the realigned business processes and focus more on the following objectives of: - creating a new business philosophy that impacts on the quality of service delivery; realigning the business processes and eliminating unnecessary ones taking into account the latest business trends; rationalizing further as a result of the new market structure; rationalizing fully fledged business units and fostering a business culture at all operating levels; implementing a leaner, flatter organization structure that best supports the corporate business processes and philosophy, and reducing costs through optimization of resources as a result of realignment and consolidation of processes and functions.

Within the context of these business restructuring efforts and the above objectives, KPLC Management drew up a program targeted on fulfillment of some performance indicators (which were mainly bench marked along the international standards and status of the organizations' performance, then). The details of the drawn up targets for these performance indicators (relating to service quality and financial performance) are hereto attached as **Appendix 2** (the KPLC July, 2003 monthly report of key performance indicators) from which the service quality indicators have further been extracted and shown as **Appendix 3**).

It is evident that KPLC Management did not conduct a customer service survey to arrive at the targets relating to the service quality indicators. A letter to this effect is hereto attached as **Appendix 1**. Within the context of above objectives, the improvement of service was to result from the "implementation of a leaner, flatter organization structure that best supported the corporate business processes and philosophy". The implementation of the flatter organization was driven by the need of decentralization of services.

A specimen of the two comparative structures before and after restructuring, (hence, decentralization of services) is attached as **Appendix 4** and **Appendix 5** showing part of the structure at the Regional level (after the restructuring) and Area level (before Restructuring), respectively. As the Restructuring was carried out, the Areas were re-organized and renamed



Regions. As is evident from the new structure in **Appendix 5**, de-centralization of services was realized through: -

- (i) Reduced levels of hierarchy in the management structure, thus making the customer's proximity to top-level management closer.
- (ii) Creating strategic business units in form of Regions and for purposes of effective supervision and effective customer service, Regions were further split into zones whereby a zone is the basic operating unit with customer contact. Senior and empowered staff were recruited as Zonal Heads to manage these zones. This way, the decision-making was made closer to the customers, thus enhancing customer service delivery through faster resolution of complaints and instant decision-making.
- (iii) Also, Zonal Heads were charged with the responsibility of entire business processes rather than in the earlier structure where the Company was organized on functional basis. During the functional organization, customers' requirements of service used to transcend several functions and no one function could wholly and effectively deal with the service delivery. In the new structure, the Zonal Head was to be a one-customer contact for all functions, that may relate to the needs of required customer service. Realization of one stop service was, therefore, more easily realizable in the new structure.
- (iv) With the flatter organisational structure, the Functional Heads are involved in the strategic issues of planning, monitoring, evaluating, training, etc. The Zonal Heads are the operational managers and serve as holistic Customer contacts.

Emphasis of the service quality delivery, is further evidenced by the enumerated items of the "Primary Focus" of the Restructuring which were listed as: - The customer and quality of service; Reducing number of Divisions and optimising span of control; Creating commercially viable business units; Re-defining the role of Head office; Staff optimization and reduction and driving down costs. The emphasis of improved quality of customer service in the decentralization of services within the wider restructuring program was and has been a primary focus.

### **1.5 Statement of the Problem**

Christopher et. al. (1991), view customer service as concerned with the building of bonds with customers and other markets or groups to ensure long term relationships of mutual advantage. George and Shirley-Ann (1995), further posits that "Needless to say, in the corporations of 1990s, quality and indeed service quality, is coming to be viewed as the major strategic variable in the battle for market share and excellence of service in the critical corporate priority".

In order to deliver quality customer service, there is need to understand service quality from both the customers' and service provider's perspective and means of measuring, recording and monitoring the quality need to be understood, also. More recent research by George and Shirley-Ann (1996), has come up with a P-C-P model after several criticisms of the SERVQUAL model. These criticisms throw light to relevance of explicative studies of perceived service quality in different industries.

In Kenya, researches on 'perceived service quality' have been carried out so far (e.g., by Mwaura, 2002; Maina, 2001; Mwenda, 1987). However, these studies tend to focus on perceived service quality in general but not in response to an actual program based on customer service enhancement. Besides, the findings of the above researches cannot be generalized to KPLC, which is in the public service utility industry. This study will also include a comparative context of the customer's perception with the management's perspective of the service quality.

Driven by the forces of energy sector statutory reforms, customers' demands for lower prices and customers' demands for enhanced service quality delivery, inter alia, KPLC undertook a restructuring program from 1997. The restructuring was carried out within the objective of mainly improving the financial performance and service quality delivery. Towards improving the service quality delivery, the organizational structure was made flatter with the aim of effecting decentralization of services. In order to maintain continuous monitoring and evaluation process, KPLC identified several performance indicators which would be measured and evaluated on monthly basis. These performance indicators, mainly, relate to both financial and service delivery performance. The service quality indicators, as identified by KPLC Management, are detailed in **Appendix 3** and were/are the management's perspective. However, there was no customer survey (or Marketing Research) done at the time to explore the customers' perspective. This study, therefore, attempted to answer the following questions: -

- a) As a utility service enterprise, what is the customers' expectation of KPLC service?.
- b) As a utility service enterprise, what is the perceived service quality by the KPLC customers?.
- c) Are there differences in the perceived service quality by the different segments/categories of KPLC customers (i.e. Domestic, Small commercial and Large commercial)?
- d) Do the customers' expectation of service quality differ in any way from the management's perspective as gauged from the service quality dimensions identified and used at the onset of the decentralization of services resultant from the restructuring program by KPLC?.

## 1.6 Objectives of the Study

The objectives of this study were: -

- (i) To determine the customers' expectations of KPLC service.
- (ii) To determine the perceived service quality of KPLC customers.
- (iii) To determine whether there are differences in the perceived service quality of the various categories of KPLC customers.
- (iv) To establish whether there is a match between the management's perspective and the customers' expectations of service quality in KPLC.

## 1.7 Importance of the Study

The results of this study are expected to be of use to the following: -

- (a) The KPLC and other public utilities in understanding what the customers regard as quality service. Efforts can then be made to match the expectations of customers with resources channeled to revamp the areas of weaknesses while sustaining the strong points.
- (b) Other service providers, especially in the related utility industry, when formulating service quality or when launching programs which rely on service quality as a major consideration or as a competitive edge.
- (c) The Ministry of Energy and Electricity Regulatory Board (ERB) as stakeholders of the energy sector, may find the study useful in understanding the determinants of service quality from the customers' perspective. This may facilitate effectiveness in their surveillance and regulatory functions of the sector.
- (d) Other Scholars and Researchers who may use it as a source of reference.

## CHAPTER TWO

### 2. LITERATURE REVIEW

#### Introduction

The broad objective of this study was to determine the KPLC customers' expectations and perceptions of service, their service quality or quality gap and the differences in service quality of various categories of the customers following decentralization of services in a restructuring program. In that respect, the following related topics were covered in this literature review in the order presented:- restructuring; decentralisation of services; customer service; service quality; perceptions and perceived quality; evaluation of service quality; service quality models; SERVQUAL and service gaps; determinants of service quality; and, measurement of service .

#### 2.1 Restructuring as a Strategic Change

As Companies seek to strengthen their existing core competencies and build new ones in order to compete more effectively, they have had to go through some strategic change. Charles and Gareth (1998) define strategic change as "the movement of a company from its present state to increase its competitive advantage". Equally, Rosabeth (1997) defines change as the process of analysing "the past to elicit the present actions required for the future". It involves moving from present state, through a transitional state, to a future desired state. According to George (1998), the very nature of a world economy embracing free markets and free enterprises implies constant change and adaptation to the dynamics of the system.

Most of these Companies have been pursuing one or a combination of the three major kinds of strategic change – Re-engineering, Restructuring and Innovation. In recent years reducing the scope of companies through restructuring has become an increasingly popular strategy particularly among the companies that diversified their activities in 1960s, 1970s and 1980s.

In most cases companies that are engaged in restructuring are divesting themselves of diversified activities in order to concentrate more effectively on their core business.

According to Charles and Gareth (1998), restructuring, as a form of strategic change has been the buzz-word of enterprises since the last decade and has mainly been in form of the following two basic steps: -

- a) Organization's reduction of its level of differentiation and integration by eliminating divisions, departments in levels of hierarchy i.e. changing towards a flatter structure from a tall hierarchical structure.

b) Downsizing by reducing the number of its employees to reduce operating costs.

Restructuring has also been based on the notion that some activities within a businesses' value chain are more critical to the success of the business strategy than others.

The critical considerations of the restructuring activity, has mainly revolved around: - Making the strategically critical (or core) activities, the building blocks for designing the organization structure and integration of support activities around the critical activities; Designing the organizational structure around customers – the structure need to be facilitative of effective customer contact with organization. Changes in the relationships between divisions or functions are common in restructuring programs. Example of such is the IBM which within the effort of cutting down development costs and speedy co-operation among engineers, created a new division in 1994 to take control of the production of microprocessors and memory systems (Gareth et. al., 1998, pp. 446).

According to Charles and Gareth (1998), forces driving Restructuring in organizations, include:-

**Over-diversification:** There is plenty of evidence that in the hey days of corporate diversification movement, which began in the 1960s and lasted until the early 1980s many companies over-diversified. More precisely, the bureaucratic inefficiencies created by expanding the scope of the organization outweighed the additional value that could be created (by diversification) and the company performance, declined. As performance declined the stock price of many of these diversified companies fell and they found themselves vulnerable to hostile take-over bids – this led to the need to restructure in order to redefine and reduce their scope.

**Competition:** In the 1980s and 1990s many diversified Companies found their core business area under attack from new competition. In order to re-devote the necessary attention to their troubled core activities, top management found it necessary to shed its diversified activities, thus leading to restructuring efforts.

**Innovations in management processing and strategy:** These have diminished the advantages of vertical integration or diversification. In response, companies have reduced the scope of their activities through restructuring and divestments.

The global trends cited above have equally been prevalent in Kenyan firms, most of which have had to compete in the global environment. The main forces which have been driving the restructuring activities in Kenya and which have been rampant in the last decade include, amongst others, the following: -

**Customer pressure:** Most firms have had to restructure to conform to emerging demands of enhanced quality in the level of service and products.

**Technological development:** This has led to growth of capital intensive manufacturing, rapid technical obsolescence leading to reduction of staff and centralized operations. Information Technology (IT) development has had remarkable input into this arena.

**Donor pressure for improved financial performance:** Reliance on funding from multilateral donors like the World Bank, African Development Bank and the International Monetary fund by the Kenya Government, has had the impact of intensified pressure towards improved financial performance by most public institutions, viz: - Kenya Power & Lighting Company Limited, Telkom (Kenya) Limited, Kenya Commercial Bank, National Bank of Kenya, e.t.c. – In most cases, there has been additional pressure to the Government to divest its stock from these public institutions in order to make them more independent and competitive.

**Legislation:** Donors have also intensified pressure of a shift from monopoly status to commercial status by most public institutions within the efforts of enhanced financial performance. In some cases this pressure has been in the form of changed legislation like in Kenya Power & Lighting Company which had to shed off the generating function to a new Company – KenGen, and Telkom which had to shed off the licensing status to a new body – Communications commission of Kenya, etc.

**Government policy of encouraging private sector Participation:** This has facilitated global competition arising from facilitated entry of new competitors in the local markets. This is evident, for example, in the electricity generation function which has seen new entrants in form of Independent Power Producers like, Ibera-Africa, Westmont, Or-Power, etc.

The above forces have had the effect of accelerated restructuring activities of most firms in Kenya, aimed at reduction of costs, enhanced level of customer service and building competitive positions within the globalized competitive environment. From the current trends, it is evident that widespread restructuring of enterprises will continue unabated. According to George (1998), having accepted the necessity of restructuring, however, the issue of how to carry it out becomes all too important. There are many ways that enterprises can restructure but, whichever way, consideration must be borne of the interests of all stakeholders or partners in the enterprise, both internal and external. One stakeholder, the customer, has been a primary focus in these restructuring activities and the greatest gains/benefits to the customer has been realized through decentralization of services as one object of the restructuring.

## 2.2 Decentralization of Services

Decentralization of services connotes delegation of authority to those involved in the service delivery activities in the organization which in effect leads to empowerment of the organization's frontline staff, who are mainly in contact with customers. Charles et. al., (1998) explains that "Authority is centralized when Managers at the upper levels of the organizational hierarchy retain the Authority to make the most important decisions, when authority is decentralized, it is delegated to divisions, functions, managers and workers at lower levels in the organization."

According to Denver and Werbel (1979), centralisation refers to concentration of decision-making authority at higher levels of the organisation, especially in determination of the methods and procedures to be used at work. Research finds that centralization can reduce flexibility, decrease autonomy, increase isolation, and lower job satisfaction which in turn can heighten conflict between Departments (Hagen & Aiken, 1967; Pfeffer, 1981). Indeed Research in marketing supports the view that greater centralisation increases levels of alienation, lowers the degree of participation in decision making and inhibits healthy exchange of ideas and constructive criticism within an organisation (Barclay, 1991; Deshpande, 1982; John & Martin, 1984; Rukert & Walker, 1987). By delegating authority in this fashion, managers can economize on bureaucratic costs and avoid communication and ordination problems because information does not have to be constantly sent to the top of organization for decisions to be made. Charles, et. al. (1998), cites the following as the main advantages of decentralization:-

- (a) When strategic managers delegate operational decision making responsibility to middle and first level managers, they reduce information overload, enabling strategic managers to spend more time on strategic decision making and consequently they can make more effective decisions.
- (b) When managers in the bottom layer of the organization become responsible for adapting the organization to suit local conditions, their motivation and accountability is enhanced. The decentralization, thus, results in promotion of organizational flexibility and reduces bureaucratic costs because lower level managers are authorized to make on-the-spot decisions. This also enhances effective customer service as decisions involving customers' complaints and service are attended to by the empowered front line staff who are always in contact with the customers.
- (c) When lower level employees are given the right to make important decisions, fewer managers are needed to oversee their activities and tell them what to do and fewer managers, of course, mean lower bureaucratic costs.

Though decentralization is so effective, centralization has its advantages, too. According to Charles et. al. (1998), centralized decision making allows easier co-ordination of the organizational activities needed to pursue a company's strategy. If managers at all levels can make their own decisions, overall planning becomes extremely difficult and the Company may lose control of its decision making. Also centralization means that decisions fit broad organizational objectives. A balance, therefore, needs to be struck to arrive at the level of decentralization or centralization. Managing the strategy/structure relationships when the number of hierarchical levels becomes too great is difficult and expensive. As company size increases, however, decentralization may become less effective. In the current competitive environment, customers demand increasingly effective decision making devoid of bureaucratic delays, this requires attainment of a reasonable level of decentralization of services to conform to this need.

Cannie and Caplin (1991), outline some difficulties an organization may face while trying to provide best services to customers which include lack of coordination of the service process; decision making power that is too remote from customers; indifferent, unmotivated powerless employees; amongst many others. Decentralization of services has been used to cross all these barriers to providing effective customer service.

### **2.3 Customer Service**

According to Kotler (1997), customer Service is a core business process which entails "all the activities involved in making it easy for customers to reach the right parties within the company and receive quick and satisfactory services, answers and resolutions of problems". Initially, marketing as a discipline developed in connection with selling of physical products. However, through the years, as the economies have grown more and more complex; it has become necessary to look at marketing from broader view point of the marketing of services.

The meaning of customer service varies considerably from one company to another. Lalonde and Zinser (1976) found a range of views, which include: -

- (i) All the activities required to accept, process, deliver and build customers in accordance with the customers' expectations.
- (ii) A complex of activities involving all areas of the business that combine to deliver and invoice the company's products in a fashion that is perceived as satisfactory by the customers and which advance the company's objectives.
- (iii) Total order entry, all communications with customers, all shipping, all freight, all invoicing and total control of repair of production.



- (iv) Timely and accurate delivery of products ordered by customers with accurate follow up and enquiry response including timely delivery of invoice.

Christopher et. al. (1991), view customer service as concerned with the building of bonds with customers and other markets or groups to ensure long-term relationships of mutual advantage. He looked at customer service as a process which provide time and place utilities for the customers and which involves pre-transaction considerations, transaction and post-transaction considerations relating to the exchange process with the customers. He notes that provision of quality customer service involves understanding what the customers buys and determining how additional value can be added to the product or services being offered.

According to Robert et. al. (1987), quality service has a link to market growth and profitability resulting from loyal customer base. A study by the Strategic Planning Institute of Cambridge at Massachusetts looked at the difference between companies that customers rate as average and below average in service quality. It found that those rated above average grow twice as fast, charge 10% more and have a substantially higher return on sales (Robert et. al., 1987). Another study of U.S. office of consumer affairs found that productive customer service could turn into significant profit center (TARP, 1986).

In order to deliver quality customer service, there is need to understand service quality from both the customers and service provider's perspective and means of measuring, recording and monitoring the quality need to be understood, also.

#### **2.4 Service Quality**

According to George and Shirley-Ann (1995), quality is a difficult concept to define and measure, yet in marketing, the quality – both financial and non-financial is assuming increasing importance throughout the world for a number of reasons, viz: -

- a) As the American Nurses Association puts it, succinctly, "A profession's concern for the quality of service constitutes the hearts of its responsibility to the public".
- b) The service sector has become the major growth industry during the latter part of this century and according to one estimate, it constitutes around 67% of the GNP (Gross national Product) of Canada and the USA respectively. Given the rapid growth in the service industry, improving service quality is of paramount importance to all organizations. Unfortunately, because of lack of research, no reliable, universal yardstick has been established for the objective measurement of service quality.

c) A number of large services are provided by Government bodies which constitute a major drain on financial resources, and consequently, accountability and obtaining value for money (in other words, good quality service) have become issues of major concern.

Mwaura (2002), posits that the unique characteristics of services from goods, that is, intangibility, variability (or heterogeneity), perishability and inseparability must be acknowledged for a full understanding of service quality. The conceptualizing of service quality into a definition that captures all variables has remained elusive to many researchers. Hubbert (1995), observes that although the four constructs are distinct, they are related attributes of consumers' perceptions of service quality. Parasuraman et.al. (1985), in developing the service quality model defined service quality as the gap between expected service and perceived service/performance.

## 2.5 Perception and Perceived Quality

Perception is the process which attribute meaning to incoming stimuli received through our five senses (Kibera and Waruingi, 1988). It can also be defined as the process of interpreting directly through our senses: it is entire process by which an individual becomes aware of environment and interprets it to fit in his own frame of reference.

According to Kibera and Waruingi (1988), perception of an object or event is the result of the interaction of two types of factors.

- (a) Stimulus factors, which are characteristic of the physical object such as size, colour, weight or shape.
- (b) Individual factors, which are characteristic of the individual. These factors include not only sensory processes but also past experience with similar items, basic motivation and expectations.

Marketers are interested in perception because it involves what customers believe. To provide satisfaction effectively in the market place, marketers must understand how all their marketing activities are perceived because perception greatly influence buyer behavior. Consumers perceive the same situation differently. Kibera and Waruingi (1988) point out the following perception characteristics, namely: - Consumer perception is objective; Perception of the consumer is selective; Perception of the consumer is time related; Consumer perception is summative. Consumers take many sensations that reach their awareness almost simultaneously. These summations add up into a complete and unified whole before a consumer can react to them. It is difficult to conceive how consumers could ever make their minds to buy if it were not for the fact that perception is summative.

## Perceived Quality *Manufacturing and Service Sectors*

Perceived quality can be defined as the customer's perception of the overall quality or superiority of a product or service with respect to its intended purpose, relative to alternative (Zeithaml, 1988). Perceived quality is, first a perception by consumers. It thus differs from several related concepts such as actual or objective quality which refers to the extent to which the product or service delivers superior service; product based quality which refers to the nature and quantity of ingredients, features or service included; and manufacturing quality which refers to conformance to specification, the "zero defect" goal.

Perceived quality cannot necessarily be objectively determined, in part because it is a perception and also because judgments about what is important to customers are involved. As Welch (1981), Chairman and CEO of General Electric said, "The customer... rates us better or worse than somebody else. It is not very scientific but it's disastrous if you score low".

Perceived quality differs from satisfaction. A customer can be satisfied because he or she had low expectations. Perceived quality also differs from attitude – a positive attitude could be generated because a product of inferior quality is very inexpensive. Conversely, a person could have a negative attitude toward a high quality product that is overpriced. Perceived quality is an intangible, overall feeling about a brand.

Consumers often judge the quality of a product or service on the basis of a variety of information cues that they associate with the product. These informational cues have been dichotomized into intrinsic and extrinsic cues (Olson, 1977; Olson and Jacoby, 1972). Intrinsic cues involve the physical component of the products (e.g. flavour, colour, texture, e.t.c.). Extrinsic cues on the other hand are product related but not part of the physical product itself. They are by definition outside the product e.g. price, brand name, level of advertising, amongst others.

### 2.6 Evaluation of Service Quality

Consumers when purchasing goods employ many tangible cues to judge quality. When purchasing services, fewer tangible cues exist (Mukiri, 2001). In most cases, tangible evidence is limited to the service provider's physical facilities, equipment and personnel. In absence of tangible cues, consumers must depend on other cues. The nature of these cues has not been extensively researched. There are notable differences in manufacturing and service sectors as enumerated in the following table.

## Differences in the Manufacturing and Service Sectors:

Manufacturing Sector	Service Sector
Product is tangible	Service consists of tangible and intangible components.
Back orders are possible	Services cannot be stored; if not used, they are lost
Producer or company is the only party involved in the making of the product	Producer and customer are both involved in the delivery of the service.
Product can be resold	Service cannot be resold
Customer usually provides formal specifications for the products	Formal specifications need not be provided by the consumer. In fact, in monopolies involving public utilities such as electricity gas telephone, etc., federal and state laws dictate the requirements.
Customer acceptance of the product is easily quantifiable	Customer satisfaction is difficult to quantify because a behavioral component associated with delivery of the service is involved.
Ownership of product change hands at a specific point in time	Rendering of a service takes place over an interval of time.

Source: Amitava (1998), *Fundamentals of Quality Control and Improvement, First Indian Reprint, 2001 (pp 650)*

If a service provider knows how the consumer will evaluate the service then it is possible to suggest ways on how to influence these evaluations in a desired direction (Gronroos, 1982). Christopher et. al. (1997), note that service quality is the ability of the organization to meet or exceed customer expectations. In this context, customers' expectations may be defined as the desires or wants of customers, that is, what they feel a service provider should offer rather than would offer. It is worth noting that in an industrial marketing or business-to-business context, the concept of expectations might be modified to encompass the idea of 'negotiated' expectations. That is, service quality is measured in terms of the extent to which performance as perceived by the customer meets or exceeds levels of expected services.

### 2.7 Service Quality Models

Sasser, Olsen and Wyckoff (1978) discussed three different dimensions of service performance: levels of materials, facilities and personnel. This implies that service quality involves more outcomes; it also includes the manner in which the service is delivered. Other research on service quality brought out other notions. Gronroos (1982), postulated that two types of service quality exist:

- (a) Technical quality which involves what the customer is actually receiving from the service.
- (b) Functional quality, which involves the manner in which the service is delivered.

According to Palmer (1992), for companies to better understand the expectations and perceptions of their customers they can use the SERVQUAL technique. It is applicable across a

broad range of service industries and can be easily modified to take account of the specific requirements of a company (for more details, see section 2.9).

More recent research by George and Shirley-Ann (1996), has come up with a P-C-P model after several criticisms of the SERVQUAL model. The P-C-P model attempts to pursue the development of measurement scales for specific service industry sector. The basic premise of the P-C-P model holds that: -

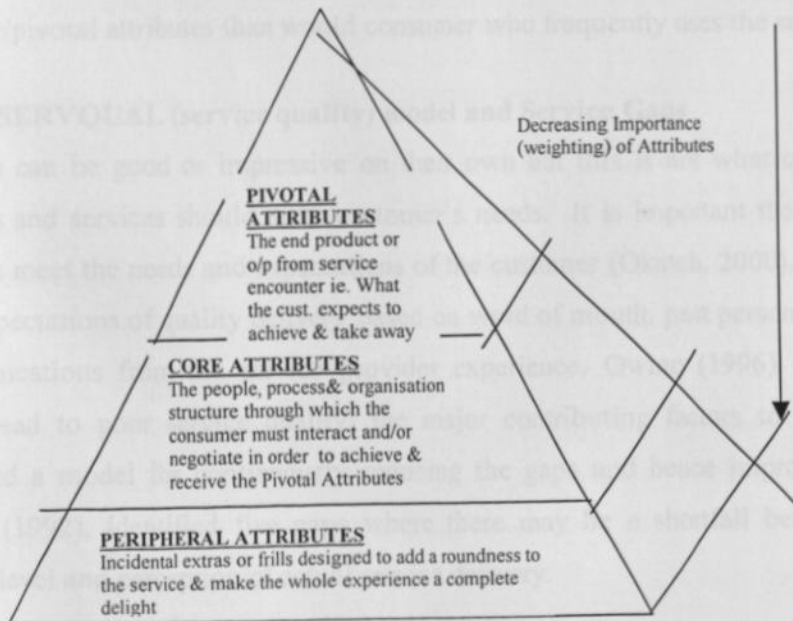
- (i) There is a growing need to develop service specific dimensions/attributes.
- (ii) The dimensions of SERVQUAL and other models do not adequately address some of the more critical issues associated with the assessment of individual services, e.g. patient care, the quality of information or the quality of education received from an organization.
- (iii) A combined (single) scale should be used to measure the “gap” between expectations and perceptions, as opposed to two separate scales.
- (iv) Individual dimensions should have different weights attached to them to indicate the importance with which they are held by the consumer.

The P-C-P model can best be described by examining the figure on the page overleaf. According to the model, every service consists of three, albeit overlapping areas where the vast majority of the dimensions and concept which have thus far been used to define service quality can and will be included. These ranked levels can loosely be defined as the inputs, processes and outputs of a service organization. This notion is somewhat similar to the system model of an organization and hence the division of the model into three hierarchical levels - pivotal (outputs), core and peripheral (jointly representing inputs and processes).

The pivotal attributes, located at the apex of the pyramid, are considered collectively to be the single most determining influence on the satisfaction levels, or otherwise, experienced from the whole service encounter. Thus, they are defined as the “end product” or “output” from the service encounter: In other words, what the consumer expects to achieve and receive, perhaps even “take away”, when the service process is duly completed. Core attributes, centered around the pivotal attributes, can best be described as the amalgamation of the people, processes and the service organizational structure through which consumers must interact and/or negotiate so that they can achieve or receive the pivotal attributes. Expressed simply, during a service encounter, if the consumer comes into contact with anyone or anything in the service organization, then these will essentially be considered to be core attributes. The third level of the model focuses on the peripheral attributes which can aptly be defined as the “incidental extras” or frills designed to add a “roundness” to the service encounter and make the whole experience for the consumer a complete delight (see the figure on next page).

Looking at the model proposed by George et. al. (1996), it is also pertinent to discuss the impact that they believe each of these attribute types may have on the satisfaction levels and hence, the service quality outcomes of a particular organization. They suggest that when a consumer makes an evaluation about a service encounter, he/she inherently attaches more weight/importance to the achievement of the pivotal attribute/s, and so, if the service is experienced only once, and all the items embodied in the pivotal attribute/s are achieved (i.e. the key output met all the customer's stated requirements, perhaps even exceeded them) with a lower degree of achievement of core and peripheral attributes, then the consumer can be expected to be reasonably satisfied. However, they realize that this may not always be the case; as the service is used more frequently, the core and peripheral attributes may begin to assume greater importance. If the pivotal feature of the service is delivered to a consequently high standard, then the consumer will begin to look more rigorously and thoroughly at the other features (core and peripheral) to see if they, too come up to the same high standard; in many respects, this infers a type of hierarchical ordering until all the service attributes have been critically assessed. Again, it must be emphasized that irrespective of the service, the customer's satisfaction levels may depend more on the output of the service, and (relatively) less on the personnel and the organizational structures (core and peripheral attributes) involved. The challenge facing any service, therefore, is to delight the customer in all three areas (pivotal, core and peripheral attributes) so that the service becomes 100 per cent satisfactory.

Skeletal Framework Designed to aid the measurement of service quality (**the P-C-P model**)



Source: George and Shirley-Ann (1996), *Relationship of the attribute levels to service quality and customer satisfaction*, *International Journal of Quality and Reliability Management*, vol 14 No. 3, 1997, pp. 274.

### **Operationalizing the P-C-P Model:**

According to George and Shirley-Ann (1996), any service sector or individual service organization which plans to adopt the P-C-P model should begin by asking itself the following three questions, at the outset: -

- (i) What are the output or “deliverables” from our service to our customers?: By addressing this question the organization will be able to identify the pivotal attributes that are relevant to its service operations.
- (ii) Who are the personnel involved and what are the organizational structures that have a role to play, in the delivery of the service? Successfully understanding the role of the personnel and the organizational structures involved in the delivery of the service will enable the organization to recognize and isolate the core and peripheral attributes.
- (iii) How can we deal with the customers’ changing expectations as they repeatedly experience the “same” service? If we accept the premise that quality management is a quest for continuous improvement, it is imperative that constant references are made back to the consumer – the service organization,” must become obsessed by listening frequently, systematically and naively to the customer”. A consumer approaches a service organization with certain needs that have to be addressed, and he/she will interact with the organization and its personnel in a unique manner that can never, and will never, be carbon-copied by any other customer-service personnel interaction. In this respect, the service organization cannot treat its customer base as one homogenous. A consumer who is experiencing the service for the first time may inherently attach more weight to the key/pivotal attributes than would consumer who frequently uses the same services.

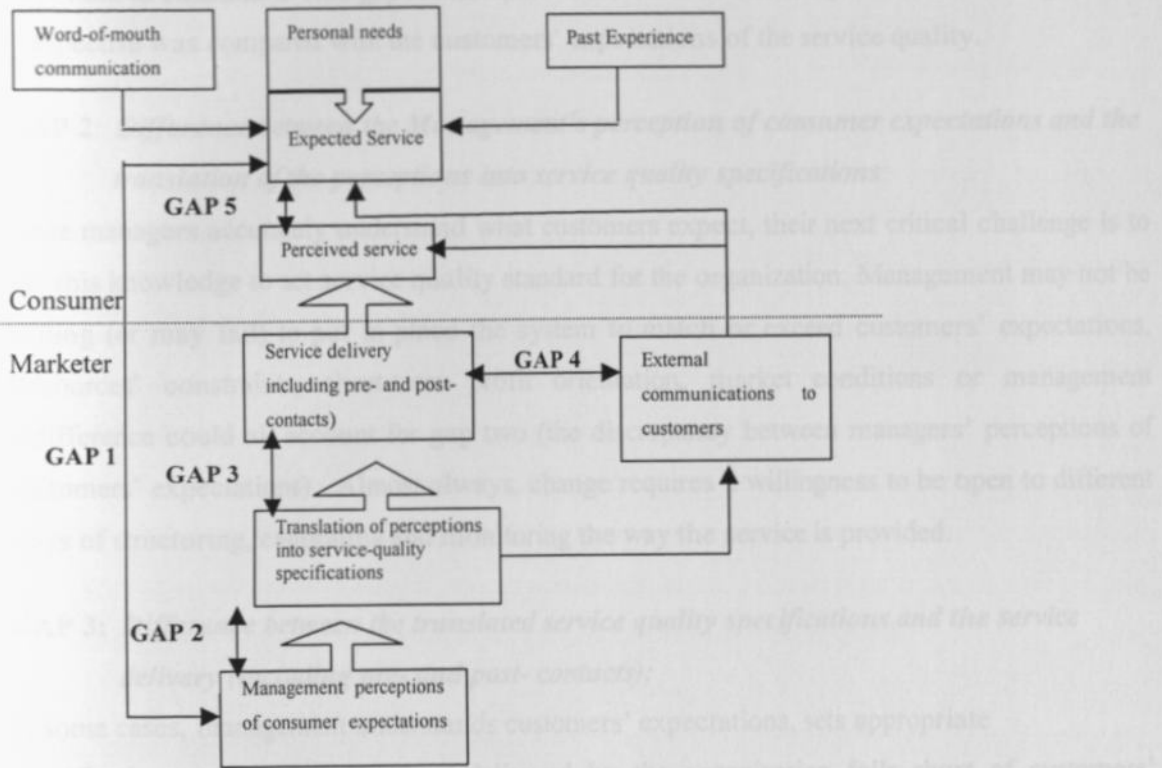
### **2.8 SERVQUAL (service quality) model and Service Gaps**

Products can be good or impressive on their own but this is not what customer wants. The products and services should meet customer’s needs. It is important that the said company’s products meet the needs and expectations of the customer (Okatch, 2000). Customers generally have expectations of quality delivery based on word of mouth, past personal needs and external communications from the service provider experience. Owino (1996), identified five gaps, which lead to poor service quality; the major contributing factors to the gaps and finally presented a model for continuously reducing the gaps and hence improving service quality. Palmer (1992), identified five gaps where there may be a shortfall between expectation of service level and perception of actual service delivery.

Gronroos (1982), introduced the first comprehensive model of service quality. Parasuraman, et. al., (1985) amplified the model and refined Gronroos’ framework. Research by Parasuraman, et.

al., (1985) has indicated that consumers' quality perception are influenced by a series of four distinct gaps occurring in organizations and whose summative effects lead to a fifth gap. These service Gaps are shown in the figure below (Conceptual Model of Service Quality).

### CONCEPTUAL MODEL OF SERVICE QUALITY



Source: Parasuraman A., Zeithaml A. V. and Leonard L.B., "A conceptual model of service Quality and its implications for future research, ", *Journal of Marketing*, Fall 1985, p.44; Lovelock (1996), *Services Marketing*, 3<sup>rd</sup> Edition, Prentice Hill International, pp 469.

#### **GAP 1: Difference between management's perception of consumer expectations and Consumer's expected service:**

Knowing what customers expect is the first and most critical step in delivering quality service. Providing a service that customers perceive as excellent, requires that a firm know what customers expect. Being a little bit wrong can mean expending money, time and other resources on things that do not count to customers, or even not surviving in a fiercely competitive market. For instance, a utility company (like KPLC) can invest in improving the office environment while the customers prefer an interruption – free supply. The difference between what customers expect and what management perceives they expect is often the result of overlooking the need to fully understand customer's expectations. Since service has clearly defined and tangible cues, gap one is consistently larger in service organizations than it is in manufacturing.

Mugo (2000) suggests that the key reasons for gap one are: - Lack of marketing research orientations as evidenced by insufficient marketing research, inadequate use of research finding



and lack of interaction between management and customers; Inadequate upward communication from contact personnel to management.; and, too many levels of management separating contact personnel and decision makers. To close this gap, (Mugo 2000) further suggests that market research must focus on relevant issues such as the features and considerations that are most important to customers. This gap formed part of the basis of this study where the management's perspective was compared with the customers' expectations of the service quality.

**GAP 2: *Difference between the Management's perception of consumer expectations and the translation of the perceptions into service quality specifications:***

Once managers accurately understand what customers expect, their next critical challenge is to use this knowledge to set service quality standard for the organization. Management may not be willing (or may fail) to put in place the system to match or exceed customers' expectations. Resources' constraints, short-term profit orientation, market conditions or management indifference could all account for gap two (the discrepancy between managers' perceptions of customers' expectations). Almost always, change requires a willingness to be open to different ways of structuring, calibrating and monitoring the way the service is provided.

**GAP 3: *Difference between the translated service quality specifications and the service delivery (including pre- and post- contacts):***

In some cases, management understands customers' expectations, sets appropriate specifications and still the service delivered by the organization falls short of customers' expectations. The difference between specifications and the actual service delivery is the service performance gap: when employees are unable or are unwilling to perform the service at the desired level. Unfortunately this service – performance gap is common in the service industry. Key reasons for gap 3 are Role ambiguity, Role conflict, Poor employee – job fit, Poor technology – job fit, Inappropriate evaluation/compensation system, Lack of teamwork, e.t.c. Empowering employees to satisfy customers helps to reduce gap three.

**GAP 4: *Difference between the promised service (from external communications) and the service delivery (including pre- and post- contacts):***

Accurate and appropriate company communication – advertising, personal selling, and public relations that do not over promise or over represent a product or service is essential in delivering service that customers perceive as high in quality. The gap between what a firm promise about the service or product and what it actually delivers must be consciously and deliberately minimized. Because of the less controllable nature of human beings (as opposed to machines), the potential to over promise on service is high. When advertising, personal selling or any other

external communication set up unrealistic expectations for customers, actual encounters disappoint them. It is the role of marketing to ensure that external communications accurately (if compellingly) reflect what happens in actual service encounters, while operations in turn, must deliver the promise.

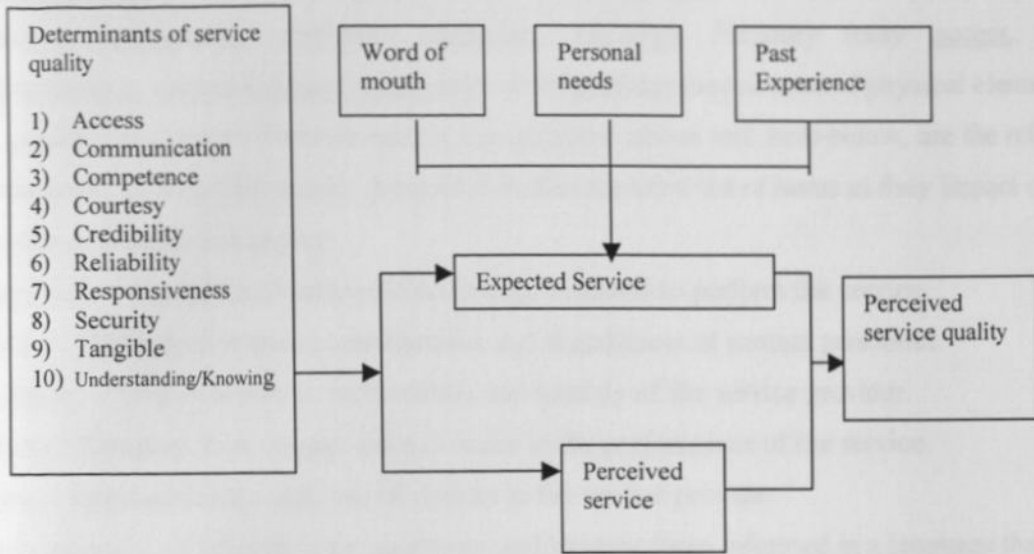
**GAP 5: Difference between the customers' expected service and the perceived service:**

Service quality is the discrepancy between customer's expectations and customer's perception of the delivered service. This discrepancy is gap five and is made of gaps one, two, three and four. The objective of management in organizations that wish to maintain a competitive edge in quality service delivery is to close the gaps in all the four cases above. These result in closing ultimate gap between the customer expectations and the customer perception of the quality of service delivered (Sokoni, 1996). The quality that a customer perceives in a service is a function of the magnitude and direction of the gap between expected service and perceived service. This gap is influenced by the four preceding gaps. There is little chance of management acting in any meaningful way to close the gap between performance and expectations if these two key variables are not defined and measured. If the gap is great, the task of bridging the subsequent gaps becomes greater and indeed it could be said that in such circumstances quality service can only be achieved by good luck rather than good management (Mugo, 2000).

## 2.9 Determinants of Service Quality

Parasuraman et. al (1985), suggested there are number of basic dimensions of service quality that can be generalized across markets. These are:- reliability, responsiveness, assurance, empathy and tangibles (to be referred to as 'generic dimensions'). These dimensions were derived from extensive multi-market research and are reduced from ten service elements as shown inside the **Service Quality Model** in the page, overleaf. The above generic dimensions can be used as the basis for measuring service performance as a starting point and then expanded to the industry or markets of study (Christopher et al, 1991). The perceived service quality as gauged from expected service and perceived service with service quality dimensions as inputs is shown in the figure below (Service Quality Model).

**SERVICE QUALITY MODEL** (Showing Perceived service Quality from the service Quality dimensions' input).



Source :Modified and adopted from:- Christopher, Payne and Ballantyne (1991), *Relationship marketing: bringing Quality, Customers Service and Marketing Together*, Lovelock (1996), *Services Marketing*, 3<sup>rd</sup> Edition, Prentice Hill International, pp 563.

Kotler (1997), summarized the determinants of quality service into five as indicated below:-

- a) Reliable, which is the ability to perform the promised service dependably and accurately.
- b) Responsiveness, which is the willingness to help customers and provide prompt service.
- c) Assurance, which refers to the knowledge and courtesy of employees and their ability to convey trust and confidence.
- d) Empathy, which refers to the provision of caring, individualized attention to customers.
- e) Tangibles, which refers to the appearance of physical facilities, equipment, personnel and communication materials.

These five dimensions will be referred to as “the generic dimensions of service quality”.

According to Palmer (1992), for companies to better understand the expectations and perceptions of their customers they can use the SERVQUAL technique. It is applicable across a broad range of service industries and can be easily modified to take account of the specific requirements of a company. According to Lovelock (1996), the most extensive research into service quality is strongly user oriented. From focus group research, Zeithaml, Berry and Parasuraman (1985), identified ten criteria used by consumers in evaluating service quality. In subsequent research, they found a high degree of correlation between several of these variables and consolidated them into five broad dimensions which are same as the above five generic

dimensions. The ten dimensions which are an expansion of the five generic ones, are as underlined below: -

Reliability (dependable, accurate performance); Responsiveness (Promptness and helpfulness), Assurance (competence, courtesy, credibility, security); Empathy (easy access, good communication, understanding the customer); and Tangibles (appearance of physical elements).

The generic dimensions of service quality are explained above and, here-below, are the relevant definitions of each service quality dimension in the expanded list of items as they impact on the customer or recipient of service:

Competence – Possession of skills and knowledge required to perform the service.

Courtesy – Politeness, respect, consideration and friendliness of contact personnel.

Credibility – Trust-worthiness, believability and honesty of the service provider.

Security – Freedom from danger, risks or doubt in the performance of the service.

Access – Approachability and ease of contact to the service provider.

Communication – Listening to the customers and keeping them informed in a language that they understand.

Understanding the customer – Making the efforts to know customers and their needs.

These ten service quality dimensions (or determinants) which are an expansion of the five generic dimensions, were used for this study of KPLC which is in the public utility industry.

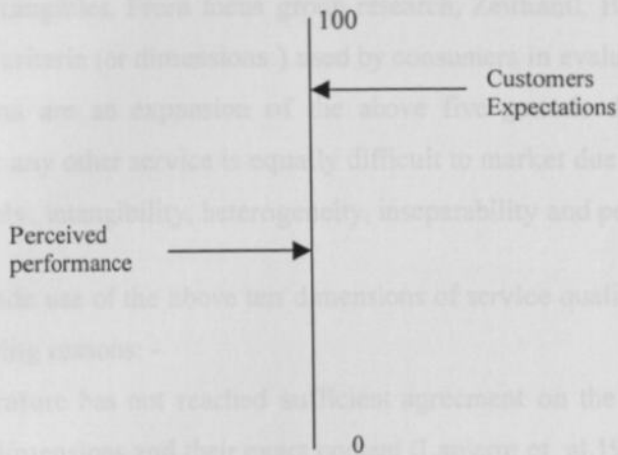
## 2.10 Measurement of Service Quality

Researchers and managers of service firms concur that service quality involves a comparison of expectations with performance. Lewis and Booms (1983), looked at service quality as a measure of how well the service level delivered matches customer expectations; Gronroos (1982), developed a model in which he contends that consumers compare the service they expect with perceptions of the service they receive in evaluating service quality; Smith and Houston (1982) claimed that satisfaction with services is related to confirmation or dis-confirmation of expectations, they based their research on the dis-confirmation paradigm, which maintains that satisfaction is related to size and direction of the dis-confirmation (Churchill and Suprenaut, 1982). In the measure of performance, it is measure of perceived performance that counts rather than the reality of performance (Christopher et. al, 1991).

To complete the definition of service quality we must emphasize that the measure of performance is essentially a measure of perceived performance. In other words, it is the customer's perceptions of performance that counts rather than the reality of performance. Christopher et. al. (1997) further argue that as far as quality of service is concerned then

'perceptions are reality'. The figure below presents a situation where expectations and perceived performance do not coincide (see next page).

### A performance and Expectations mismatch



*Source: Christopher, Payne, and Ballantyne (1997), Relationship Marketing: Bringing Quality, customer service and Marketing together; Quoted from unpublished MBA project, Mwaura A.K., Perceived service quality (the case of Matatu industry), pp. 13.*

Due to the intangible nature of services, consumers opt from among virtually indistinguishable alternatives and through experience develop an attitude towards the service.

Chava et. al. (1996), define Likert Scaling as a method used to measure attitudes. To construct a Likert scale, researchers usually follow six steps:-

- (a) Compile possible scale items, (b) Administer these items to a random sample of respondents, (c) Compute a total score for each respondent for each item, (d) Determine the discriminative power of the items, (e) Select the scale items, and (f) Test reliability.

The possible scale items may express a wide range of attitudes, from extremely positive to extremely negative or a five fixed – alternative expressions such as “strongly agree”, “agree”, “neither agree nor disagree”, “disagree” and “strongly disagree”, etc. Each item requires the respondent to check, rate and tick one of the offered five fixed alternative expressions in the five-point continuum, values of 1,2,3,4,5 or 5,4,3,2,1 as assigned. These values express the relative weights and their directions determined by the favourableness or unfavourableness of the item. The service quality dimensions are mainly based on the behavioural considerations or attitudes of the service vendor and service recipient. Therefore, the five point Likert scale will be used to measure the service quality dimensions.

From the literature review it may be deduced that there may exist some gaps between both the customers and KPLC management's perspective of quality service. Regardless of type of service, customers tend to use similar criteria in evaluating service quality. Kotler (1997), has summarized them into five classes, which include reliability, responsiveness, assurance, empathy and tangibles. From focus group research, Zeithaml, Berry and Parasuraman (1985), identified ten criteria (or dimensions) used by consumers in evaluating service quality and these ten dimensions are an expansion of the above five generic dimensions. Electricity supply provision like any other service is equally difficult to market due to the unique characteristic of services namely, intangibility, heterogeneity, inseparability and perishability.

This study made use of the above ten dimensions of service quality and the SERVQUAL model for the following reasons: -

- (i) The literature has not reached sufficient agreement on the proper reduced set of service quality dimensions and their exact content (Lapierre et. al.1995, Parasuraman et. al. 1994).
- (ii) The P-C-P model criticism of SERVQUAL is mainly based on the latter's "equal treatment of importance of all the dimensions of quality" and the generalization of measurement for all service industries. However, in this particular study the relative importance of each dimension of quality will be assessed by statistical analysis of all the scores by each respondent for each dimension of quality – this will address the equal importance treatment. Also, the study is for the public utility industry in Kenya and no attempt will be made to generalize the specific findings to all service industries.
- (iii) General agreement seems to exist on the completeness and relevance of the original ten service quality dimensions

This study will make use of these ten dimensions of service quality and operationalize them (see, research methodology – section 3.6).

## CHAPTER THREE

### 3. RESEARCH METHODOLOGY

#### Introduction

The details of the procedures used in conducting this study are covered below under the following subjects and in order of:- research design; the population of study; sample frame; sample and sample design; data collection methods; operationalising the service quality dimensions; and data analysis techniques.

#### 3.1 Research Design

The aim of this study was to establish customers' perception of service quality following decentralization of services by KPLC. According to Donald and Pamela (1998), such a study concerned with finding out who, what, where, how, e.t.c. is a *descriptive study*. Ngatia, (2000); Maina (2001) and Mwaura, (2002) have used the descriptive design in their studies successfully.

#### 3.2 The Population

The population of interest in this study was all the KPLC customers in Kenya who are geographically spread in Nairobi, Coast, Nyeri & Thika (Mt. Kenya region), Nakuru, Eldoret & Kisumu (West region). The customers are segmented into Domestic, Small commercial and Large commercial (see, attached **Appendix 6**). Homogeneity in attitude exists in each segment of the customers but there may be lack of homogeneity across the different segments of customers. This is mainly due to the nature of need and impact of service failure which is same for each segment of customers, but may differ in different segments of customers.

#### 3.3 Sample Frame

A list of all KPLC customers was obtained from the July, 2003 billing details, which is the most current source. The customers were stratified into: - Domestic (522,470); Small commercial (120,649); and, Large commercial (3,395); all totaling 646, 514 customers. From this list of all the customers, a list of the customers in Nairobi and Nakuru was generated, each with a population of 324,705 for Nairobi and 54,127 for Nakuru. It is from these two groups of customers that the representative sample was drawn.

#### 3.4 Sample and Sample Design

A sample of 306 customers was used for this study. However, a targeted sample of 350 units had been earmarked for the study. This number conforms to the widely held rule of thumb that, to be representative, a sample should have thirty (30) or more test units (Wayne and Terrel, 1975).

This is further supported by Cooper and Emory (1995) who observe that in a population of 10 million, a sample of more than 2 million can be misleading while a sample of 1,000 drawn in a proper manner can be more adequate. This ad hoc method of determining sample size was used rather than the statistical method due to non-availability of variables of the population of study. Homogeneity exists in each category/segment of the customers. Nairobi, Coast and Kisumu have similar pattern of distribution of customers while Nakuru, Nyeri, Eldoret and Thika have similar pattern of customers' distribution. Any one area in the two groups would be representative of the others in the aspects of concentration of customers, needs and hence the attitudes of the customers, sensitivity of the service provider and customer awareness. Customers in Nakuru and Nairobi were, therefore, used to represent the entire population, for the purposes of this study. Sample units were randomly selected from the customers' listing in Nairobi (324,705) and Nakuru (54,127) whereby each segment was represented on a stratified sampling basis with a proportionate allocation of sample units from the two groups of customers (in Nairobi and Nakuru) and the three segments/strata, as shown in the following table, 3.4: -

Table 3.4: Calculated apportionment of targeted sample units from the population units in Nairobi and Nakuru

Area	Strata/segment of customers	Population (N)		Sample Units (n)	
		Number of customers	Percentage (%) of total population	Percentage (%) of sample units	Number of customers in target sample
Nairobi	Domestic	284,961	75.22	75.22	263
	Small Commercial	38,061	10.05	10.05	35
	Large commercial	1683	0.44	0.44	2
	Sub-total (Nairobi)	324,705	85.71	85.71	300
Nakuru	Domestic	41,309	10.90	10.90	38
	Small Commercial	12,737	3.36	3.36	12
	Large commercial	351	0.03	0.03	**1
	Sub-total (Nakuru)	54,127	14.29	14.29	51
Gross	Total	378,832	100.00	100.00	351

\*\* Increased to at least 1 sample unit

The sampling was done randomly and by complimenting various methods as: - use of customers who visit the various KPLC commercial offices, visiting the available domestic customers in their households and Large commercial customers in their commercial premises.



### 3.5 Data Collection Methods

Primary and Secondary data was collected for this study. The secondary data was obtained from KPLC monthly report (July, 2003) of Key Performance Indicators incorporating both financial and service quality determinants. The secondary data relevant to this study included all the service quality indicators, as identified by KPLC Management, shown in the attached **Appendix 3**). These service quality indicators can be viewed as the KPLC management's perspective of Service Quality.

The Primary data was obtained by use of a survey method using structured questionnaire (attached to this proposal as **Appendix 7**). The respondents filled the questionnaire with the help of the Research Assistants, this approach was aimed at enhancing the response rate and assisting the interviewees who were not able to read or write.

The Questionnaire was divided into 3 parts, viz:

- a) Part A - Was designed to obtain the general data of the respondents.
- b) Part B - Consisted of attributes to be scored on 5 point Likert Scale continuum to obtain information of the extent of each customer's expectation of the quality of service in relation to each element of the service quality dimension of the listed 27 attributes of service quality.
- c) Part C - Consisted of attributes to be scored on Likert Scale continuum to obtain information on the extent to which KPLC has performed as judged by the customers (perceived service) in each service quality dimension. The same attributes of the expected service quality in part B, above, were again assessed for perceived performance.

### 3.5 Operationalizing the Service Quality Dimensions

In order to operationalize the service quality dimensions, the properties of each were expounded as shown in the following **Table 3.5** and the questions relevant to these properties are formulated in the fourth column to facilitate assessment by the customers. The last column indicates the particular questionnaire item/s (i.e. the questions) relevant to each service quality dimension (or determinant). The questionnaire uses the likert scale to measure the expectations and perceptions (thus, attitudes and behaviours) of the customers. Ngatia, (2000), Maina (2001) and Mwaura, 2002) have used the likert scale in their studies successfully.

**Table 3.6 Operationalizing the Service Quality Dimensions:**

Broad Generic Dimensions Of Quality	Expanded Dimensions Of Quality	Definition Of The Dimension	Relevant Issues For Customers Of Kplc Electricity Utility Service	Relevant Questions in Questionnaire
1. Reliability	Reliability	Ability to perform service dependably and accurately	<ul style="list-style-type: none"> <li>- Are bills free of errors?</li> <li>- Does Emergency service attend to customers correctly first time</li> <li>- Are bills generated from accurate meter readings?</li> <li>- Do commercial office staff solve complaints first time?</li> </ul>	1,2,3 and 4
2. Responsiveness	Responsiveness	Willingness to help customers and provide prompt service	<ul style="list-style-type: none"> <li>- Does the Emergency service crew solve problems quickly?</li> <li>- Are call center staff ready to help customers whose supply is interrupted</li> <li>- Does the office staff solve bills' complaints quickly?</li> </ul>	5,6 and 7
3. Assurance	Competence	Possession of the skills and knowledge required to perform the service	<ul style="list-style-type: none"> <li>- Does the field crew repair or install supply correctly?</li> <li>- Do the office staff solve complaints accurately?</li> </ul>	8 and 9
	Courtesy	Politeness, respect, consideration and friendliness of contact personnel	<ul style="list-style-type: none"> <li>- Do the field service crew show respect when they visit customers?</li> <li>- Do the office staff show respect when solving customer complaints?</li> <li>- Are the staff generally friendly to the customers?</li> </ul>	10
	Credibility	Trustworthiness, believability, honesty of the service provider	<ul style="list-style-type: none"> <li>- Does the repair crew guarantee their work?</li> <li>- Do the office staff guarantee correctness of what they do to resolve complaints?</li> </ul>	11
	Security	Freedom from danger, risk or doubt	<ul style="list-style-type: none"> <li>- Are the KPLC offices safe for customers?</li> <li>- When customers pay bills are they sure it will not be disconnected?</li> <li>- Do customers allow field staff free access to houses?</li> </ul>	12, 13, 14 and 15
4. Empathy	Access	Approachability and ease of contact	<ul style="list-style-type: none"> <li>- How easy is it for customers to see supervisors when in problems?</li> <li>- Are the KPLC offices open during all office hours?</li> <li>- Is Emergency office accessible at all times?</li> <li>- Are Emergency offices conveniently located?</li> </ul>	16, 17, 18, 19 and 20
	Communication	Listening to customers and keeping them informed in a language they understand	<ul style="list-style-type: none"> <li>- When customers have problems are managers willing to listen?</li> <li>- When service crew can't repair, do they advise customers?</li> <li>- When customers request for complaints resolution, is there effective feedback?</li> </ul>	21 and 22
	Understanding the Customer	Making the effort to know customers and their needs	<ul style="list-style-type: none"> <li>- Does someone in KPLC recognize regular and large power customers?</li> <li>- Are office staff flexible in accommodating customers schedule?</li> </ul>	23 and 24
5. Tangibles	Tangibles	Appearance of physical facilities, equipment, personnel and communication materials	<ul style="list-style-type: none"> <li>- Are the offices and other KPLC facilities attractive?</li> <li>- Are the staff well dressed?</li> <li>- Do the vehicles look well serviced</li> <li>- Do the service crews have communication facilities with office staff?</li> <li>- Are the bills easy to understand?</li> </ul>	25, 26, and 27

For the expected service, respondents specified the importance of each service quality element (attributes of service quality) using a 5 point likert scale, ranging from “ Very Important (5) to “Not important at all (1)” , whereby:-

- The scores of both ‘not important’ and “not important at all” were taken to represent a variable which is of no consequence (N.C) in determining the service quality (equivalent to 0 to 2.5 on the continuous likert scale;  $0 \leq N.C. < 2.5$ ).
- The scores of “somewhat important” were taken to be neither important nor of no consequence (same as indifferent (I)) in determining the service quality (equivalent to the discrete value of 2.5 at the likert scale;  $I = 2.5$ ).
- The scores of both “Very Important” and “Important” were taken to represent a variable which is important (IM) in determining the service quality (equivalent to 2.5 to 5.0 on the continuous likert scale;  $2.5 < IM \leq 5$ ).

For the perceived service , respondents specified their experience of received service using a 5 point likert scale, ranging from “ Very well” (5) to “Very poorly (1)”, whereby:-

- The scores on both “Poorly” and “Very poorly” were taken to represent dissatisfaction (D) with the quality of service (equivalent to 0 to 2.5 on the continuous likert scale;  $0 \leq D < 2.5$ ).
- The scores of fair were taken to be neither satisfied nor dissatisfied with the quality of Service or Indifferent (I) (equivalent to the discrete value of 2.5 at the likert scale;  $I = 2.5$ ).
- The scores of both “Very well” and “well” were taken to represent satisfaction (S) with the quality of service (equivalent to 2.5 to 5.0 on the continuous likert scale;  $2.5 < S \leq 5$ ).

The questions which relate to each service quality dimension are shown in the last column of the above, table 3.5.

### 3.7 Data Analysis Techniques

This study is modelled on a descriptive framework and, therefore, descriptive statistics were used to analyse the data. Data in Part A of the questionnaire was analysed by use of frequency tables while the data of the likert scale scores in Parts B and C of the questionnaire was analysed by use of frequency tables, means, standard deviation and coefficient of variation (for each attribute and dimension of service quality).

Means of the scores of the likert scale were used to determine the weighting factor of the importance of each service quality dimension while the coefficient of variation was used to assess the extent of agreement by the different customers on the rated importance of the attribute and dimension. With these variables, it was possible to assess, rate and rank each service quality

dimension in terms of its weighted importance in determining the expected service and the perceived service. Details of how data was analysed in relation to each objective is as follows:-

Customers' expectations of service or objective (i) was analysed by use of the findings of the likert scale measurements in part B of the questionnaire whereby the Means, standard deviations and coefficients of variation for each dimension (or variable) was used to rate the relative importance of each service quality dimension in determining the expected service by KPLC customers.

Perceived service quality of KPLC customers or objective (ii) was analysed by comparing the means, standard deviations and coefficients of variation of each service quality dimension in Part B of the questionnaire with same values in part C of the questionnaire. By calculating the differences between the means of service quality dimensions in parts B and C of the questionnaire, it was possible to compute the "Gap" of the service quality which is Perceptions (P) – Expectations (E) in parts C and B, respectively. This measured the perceived service quality (and hence, the quality gap) by the KPLC customers and was also a measure of GAP 5 in the SERVQUAL (service quality) model.

Differences in the perceived service quality of the three categories of KPLC customers or objective (iii) was analysed by comparing means, standard deviation and coefficient of variation of the perceived service quality of the three segments/strata of KPLC customers.

Management's perspective of service quality viz-a-viz the findings of the study or objective (iv) was evaluated by comparing the extent of coverage of the service quality indicators in the secondary data (**Appendix 3**) as compared with the wide scope of the service quality dimensions measured in part B of the questionnaire. The various dimensions in part B were classified in the scale of 0 – 2.5, 2.5 and 2.5 – 5.0, (representing, Not Important, Indifferent and Important, respectively). Then, the service quality indicators in the secondary data were placed in appropriate scale, thus revealing the extent of their importance. Proportions and percentages were used to show this information. This made it possible to evaluate the extent to which Management's perspective were viz-a-viz the customers' expectations. This was measure of GAP 1 in the SERVQUAL (service quality) model.

## CHAPTER FOUR

### 4. DATA ANALYSIS AND FINDINGS

#### Introduction

In this chapter, data pertaining to KPLC customers' expectations of service, perceived service quality for both 'all customers' and 'different categories of customers' and the management's perspective of the service quality determinants are hereby analysed and interpreted.

The questionnaires were edited and coded after they were filled in. Seventeen questionnaires were rejected because of incomplete information in some parts. Table 4.1 below shows a summary of response rating with respect to the targeted sample size.

As is shown in the table, below, 246 of the targeted 306 domestic customers (82%), 45 of the targeted 47 small commercial customers (96%) and 15 customers instead of the 3 targeted large commercial customers (500%) responded to the questionnaires. The large commercial customers were increased at the onset of data collection to enhance adequate sample, and hence, objectivity of the results. Overall, the response rate of customers is about 87 % which the researcher found adequate and sufficient for the study for the purpose of data analysis. The response rate compare favourably well with other studies on perceived service quality, such as, 84% response rate by Mwaura (2002), 73% by Maina (2001) and 84% by Ngatia (2000).

Table 4.1 : Response Rate.of the targeted sample of customers

Respondents' Type	Targeted Respondents	Actual Respondents	% Response Rate
Domestic Customers	301	246	82%
Small Commercial Customers	47	45	96%
***Large Power Customers	3	15	500%
Total	351	306	87%

\*\*\* Sample units increased to enhance objectivity of the study

*Source: Targeted respondents are obtained from Table 3.4 in chapter 3 while actual respondents are obtained from Research Data (totals of column with information on 'durations of customers' in Appendices 10,11 and 12)*

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The respondents have operated accounts with Kenya Power and Lighting Company Limited for periods shown in the Table 4.2, below:-

Table 4.2: Proportionate duration of customers' stay with KPLC

	DURATION	NUMBER OF RESPONDENTS	PERCENTAGE
1	Below 2 years	51	16.7%
2	Between 2 and 5 years	58	19.0%
3	Above 5 years	197	64.3%
	Grand total	306	100%

*Source: Research Data (column with information on 'durations of customers' in Appendix 9)*

From the above table, it is evident that a total of 306 customers responded and they all indicated the periods they have operated their accounts with KPLC. 51 customers (or 16.7%) have operated their accounts for less than two years, 58 customers (or 19.0%) have operated their accounts for periods between two and five years while 197 customers (or 64.3%) have operated their accounts in excess of five years. Therefore, it is evident that most of the respondents and thus the KPLC customers have operated their accounts in excess of 5 years. This is explained by the fact that:- as a monopolistic utility enterprise, customers have no option of switching over to alternative providers of service.; and, the tendency to change account numbers or location of premises seem to be minimal, thus most customers seem to be operating one account for prolonged periods of time. The implication of this sample with a long duration of clientele is that:- the assessment of the expected service and received service are mainly based on customers who have interacted with the utility for prolonged periods, this is likely to lead to objective and balanced assessment; and, Research assistants conducting the questionnaire reported a general observation of motivated customers due to involvement in the exercise which might imply that these customers expect a positive action plan towards improved service from the results of the study

The formulae used for calculating the means, variance, standard deviation and coefficient of variation are as per attached Appendix 8. The various tables relating to the objectives of the study and indicating the frequency of scores of the likert scale answers, the computed means, standard deviations, variance, coefficient of variation, service quality gaps and the proportionate service quality gaps are shown in the attached Appendices 9, 10, 11, 12, 13, 14, 15 and 16.

#### 4.1 Measures of Customers' Expectations of service

These measurements from the likert scale scores and the calculated variables (means, standard deviation, coefficient of variation, service quality gap and proportional service quality gap) are represented in the attached Appendices 9 and 10 (for all categories of customers). The customers' expectations of service on the basis of the ten items of the service quality dimensions, in descending order of importance, as measured, is as summarized in Table 4.3, below.

Table 4.3 : Service Quality dimensions and their relative importance

	Service quality dimension	Mean score, Me	Coefficient of Variation, Ce	Relative Proportional Importance (%)
1	Reliability	4.467	17.85%	10.33%
2	Responsiveness	4.428	17.29%	10.24%
3	Credibility	4.425	18.20%	10.23%
4	Security	4.391	19.8%	10.15%
5	Competence	4.389	17.72%	10.15%
6	Access	4.294	19.80%	9.93%
7	Courtesy	4.288	19.80%	9.91%
8	Communication	4.240	20.01%	9.80%
9	Tangibles	4.233	21.13%	9.79%
10	Understanding the customer	4.096	23.16%	9.47%
	Grand Total (Means)	43.251		100.00%

Extracted from Appendix 9; Measures of customers' expectations of service (Source: Research Data).

The variables in the table 4.3 above are obtained from the respondents' scores of the answers to the service quality attributes' questions on the likert scale which were entered in the score sheet in Appendix 9. After these entries, the means of expectations of each service quality dimension, Me, are calculated from the scores of likert scale scores using the formulae in appendix 8. Similarly, the coefficient of variation, Ce, of the respondents' scores on the likert scale scores for each service quality dimension are calculated by the formulae in Appendix 8. In order to compare the relative weight of each service quality dimension, the relative proportional importance of each dimension is computed as follows:

$$\frac{(\text{Mean of particular quality dimension})}{(\text{Total of all means of all service quality dimensions})} \times 100\%, \text{ whose values are shown in the Table 4.4, below:}$$

in the last column of the above table 4.3. With all service quality dimensions comprising a 100% value the relative weight of each dimension is then as displayed in the last column of above table.

The means of scores are a measure of the relative importance of each service quality dimension while the corresponding coefficient of variation is a measure of the agreement or disagreement of the same mean of scores by the various respondents. The lower the coefficient of variation the greater the degree of agreement, and vice versa. The mean of a service quality dimension with more than one attribute is computed by calculating the average of the means of related attributes. Equally, the standard deviation of a service quality dimension with more than one attribute is computed by calculating the square root of the sum of all variances of related attributes, after when the coefficient of variation is obtained by dividing the standard deviation with the corresponding mean.

As is evident from the above table, the dimension of 'reliability' with a mean score (Me) of 4.467 tops the list followed by 'responsiveness' and progresses downwards to the last item of 'understanding the customer' with a mean score of 4.096. The relative proportional importance ranges from 9.47% to 10.33% which shows that a generally high importance is prevalent for all the service quality dimensions in KPLC and hence in the utility industry.

#### **4.2 Perceived Service Quality**

The received service is measured by computing the means of the scores of likert scale to the answers of service quality attributes' answers of the received service. Just like the expected service in 4.2, above, the mean of a service quality dimension with more than one attribute is computed by calculating the average of the means of related attributes. Equally, the standard deviation of a service quality dimension with more than one attribute is computed by calculating the square root of the sum of all variances of related attributes, after when the coefficient of variation is obtained by dividing the standard deviation with the corresponding mean.

As is shown in Appendix 10, the perceived service quality (or Quality Gap),  $Me - Mr$ , is computed by subtracting the mean of received service from the corresponding mean of expected service. Also, the percentage quality gap is obtained by dividing the quality gap with the corresponding mean of expected service, Me (which is the value of reference) and then scaling the obtained fraction to percentage measure. This is done for all service quality dimensions and the corresponding values of the results are shown in the Table 4.4, below:



Table 4.4 Computed Quality Gap of the service Quality dimensions

	Service Quality Dimension	Measure of Expected service ( Me )	Measure of received service ( Mr )	Quality Gap (Me – Mr )	Percentage Quality Gap $\frac{(Me-Mr)}{Me} \times 100\%$
1	Reliability	4.467	3.531	0.936	20.95
2	Responsiveness	4.428	3.489	0.939	21.21
3	Credibility	4.425	3.602	0.823	18.60
4	Security	4.391	3.800	0.592	13.47
5	Competence	4.389	3.608	0.781	17.80
6	Access	4.294	3.611	0.683	15.91
7	Courtesy	4.288	3.471	0.817	19.05
8	Communication	4.240	3.423	0.817	19.27
9	Tangibles	4.233	3.729	0.504	11.92
10	Understanding the customer	4.096	3.364	0.732	17.87
	<b>Average Total</b>	<b>4.332</b>	<b>3.573</b>	<b>0.759</b>	<b>17.53</b>

Source: Research data - Extracted from the computed variables of the likert scale scores of 'all customers' (Appendices 9 & 10)

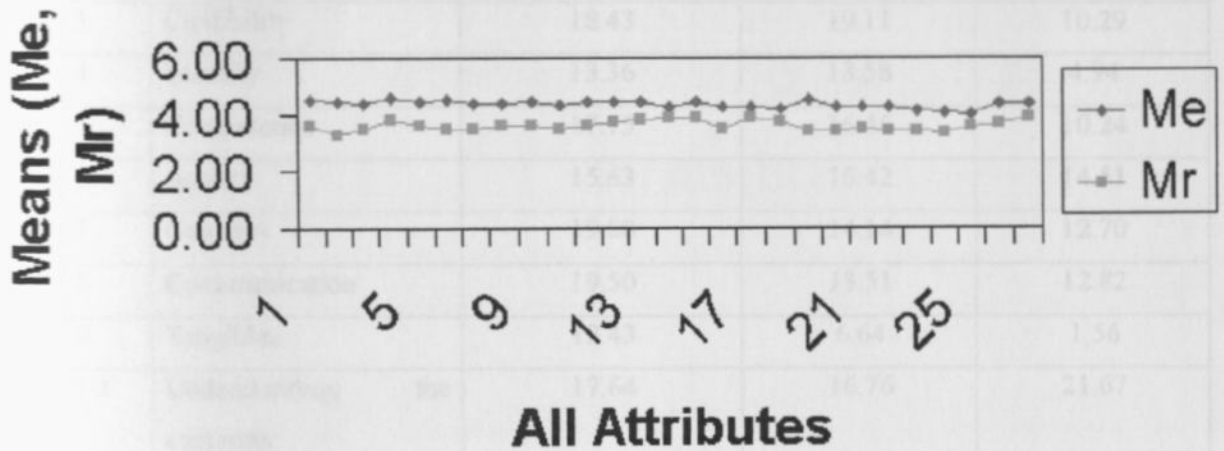
The Me values of the above table are shown on column 3 , Mr values on column 4, Me – Mr values on column 5 and percentage gap on column 6. From the table, the overall mean score of expected service is 4.332 while the corresponding mean score of received service is 3.573. The quality gap is therefore, Me - Mr , which is 0.759. The proportionate percentage gap is 17.53%.

The service Gaps for the ten service quality dimensions are tabulated in the above Table 4.4, in order of importance of each service quality dimensions, as measured and computed. 'Reliability' dimension has the highest mean of expected service followed by 'responsiveness' all the way down to 'understanding the customer'. The perceived service quality gap is most for 'Responsiveness' at 21.21% and least for 'Tangibles' at 11.92% implying that KPLC's customers are most dissatisfied with 'responsiveness' and least dissatisfied with 'Tangibles'.

The graphical display of these service quality gaps for all the twenty seven attributes of the service quality (which would be more less same as for the above ten dimensions of service

quality which are obtained from averages of the twenty seven attributes) is displayed in the following graph.

### Line Graph For Means (All customers)



Generally, the graph shows a higher level of expected service as compared to the received service by the respondents on all the service quality dimensions. This is an indication of a prevailing 'Gap' of the service quality for all the dimensions of service quality.

#### 4.3 Perceived Service Quality of the various categories of customers

The quality Gaps or perceived service quality by the different categories of customers with respect to the various service quality dimensions and the overall values is shown in the Table 4.5, below. These proportionate quality gaps, for each category of customers are obtained in a similar way to the method used for 'all customers' data in 4.3 above (refer to details of Table

4.3). For each service quality dimension, the quality gaps are shown for 'Domestic customers' in column 3, 'Small commercial customers' in column 4 and 'Large commercial customers' in column 5.

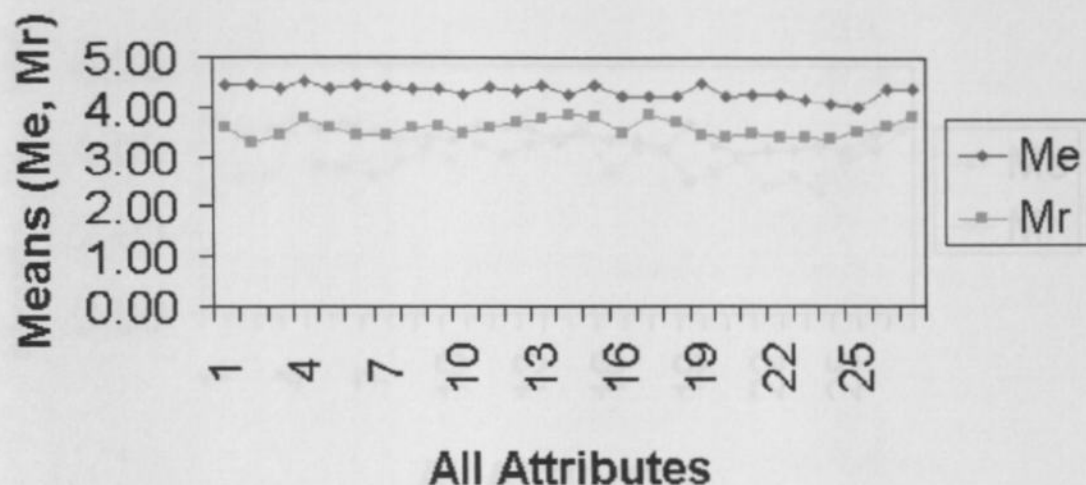
Table 4.5: Computed Service Quality Gaps for different categories of customers

	Service Quality Dimension	Calculated Quality Gaps for various categories of customers (in proportionate percentage)		
		DOMESTIC	SMALL COMMERCIAL	LARGE COMMERCIAL
1	Reliability	20.66	19.08	20.00
2	Responsiveness	20.67	19.77	22.28
3	Credibility	18.43	19.11	10.29
4	Security	13.36	13.58	4.94
5	Competence	17.75	16.46	10.24
6	Access	15.63	15.42	14.51
7	Courtesy	19.00	14.14	12.70
8	Communication	19.50	13.51	12.82
9	Tangibles	12.43	6.64	1.56
10	Understanding the customer	17.64	16.76	21.67
	<b>Overall Gap for all dimensions</b>	<b>17.39</b>	<b>15.77</b>	<b>13.71</b>

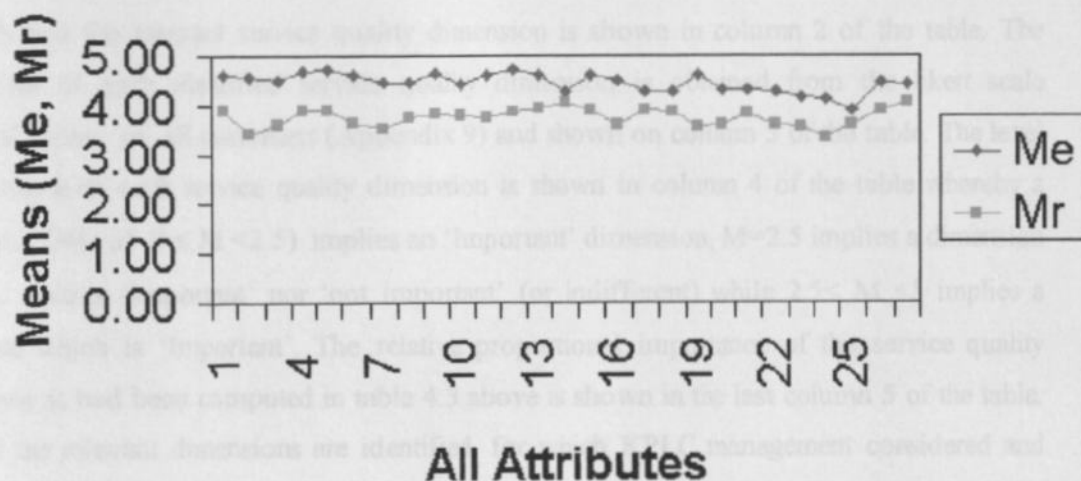
*Source: Computed from Research Data likert scale scores of expected service and received service; computed service quality variables for various categories of customers (Appendices 11,12, 13, 14, 15 and 16)*

From the above table 4.4, domestic customers show a generally higher quality gap followed by small commercial customers, and then the large commercial customers. Individual quality gaps for each service quality dimension are shown in columns 3, 4, and 5. In summary, the overall average quality gaps are 17.39%, 15.77% and 13.71% for domestic, small commercial and large commercial, respectively. A graphical display of these quality gaps for the three different categories of customers along all the twenty seven identified attributes of service quality is displayed in the graphs below. This is the same display for the ten service quality dimensions which are obtained from the mean of these twenty seven attributes.

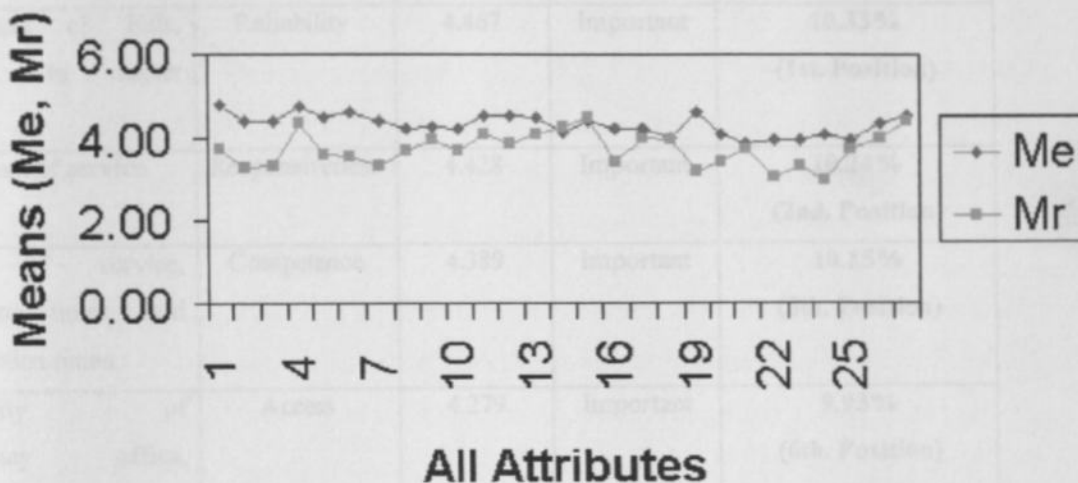
### Line Graph For Means (Domestic customers)



### Line Graph For Means (Small commercial customers)



## Line Graph For Means (Large commercial customers)



#### 4.4 Management's perspective of service quality viz-a-viz the Research findings.

The service quality dimensions used by KPLC management in drawing up the performance targets; as they relate to the service quality dimensions are shown in column 1 of the Table 4.6, below. These attributes are interpreted and related to the ten service quality dimensions used in this study and the relevant service quality dimension is shown in column 2 of the table. The mean score of each identified service quality dimension is obtained from the likert scale attributes' scores of all customers (Appendix 9) and shown on column 3 of the table. The level of importance of each service quality dimension is shown in column 4 of the table whereby a mean score (M) of  $0 \leq M < 2.5$  implies an 'Important' dimension,  $M=2.5$  implies a dimension which is neither 'important' nor 'not important' (or indifferent) while  $2.5 < M \leq 5$  implies a dimension which is 'Important'. The relative proportional importance of the service quality dimensions as had been computed in table 4.3 above is shown in the last column 5 of the table. Once all the relevant dimensions are identified, for which KPLC management considered and included in the performance targets (even if it is only one attribute of the many that comprise the dimension), then the total of the relative proportional importances of the dimensions would approximately show the total scope of the covered dimensions by KPLC management.

Table 4.6 : Management's perspective in the arena of service quality dimensions

Attributes as per KPLC's targets	Related service quality dimensions (S.Q.D.)	Mean score of expected service, Me	Importance level in the continuous likert scale	Relative proportional importance of S.Q.D. in percentage (Ranking)
Correctness of bills, accuracy in meter readings	Reliability	4.467	Important	10.33% (1st. Position)
Promptness of service	Responsiveness	4.428	Important	10.24% (2nd. Position)
Speed of service, restoration times, and reconnection times	Competence	4.389	Important	10.15% (5th. Position)
Acesibility of Emergency office, response time to service calls	Access	4.279	Important	9.93% (6th. Position)
<b>Total coverage as per KPLC's targets</b>				<b>40.65</b>

Source: KPLC Management's service quality dimensions in the performance targets and the Research Data – Appendices 3 and 9: (Last column data is obtained from previous table 4.3, above)

From the table, it is evident that KPLC mangement defined performance targets' determinants relating to service quality. These determinants partly included service quality dimensions of reliability, responsiveness, competence and access and whose total of relative importance is 40.65% from the above table. There is no KPLC service quality determinant which would relate to the other dimensions of service quality (credibility, security, courtesy, communication, tangibles and understanding the customer).

## CHAPTER FIVE

### 5. DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

#### Introduction

The public utilities offer vital services for the economic well being of the general public in any country. The enormous public funds expended in the public utilities is a growing concern to the Government and other stakeholders (William, 1961). Provision of quality service by the public utilities, is no longer an option but an obligation to the Government and the public. Utilities, then have to focus on service quality in their endeavour to satisfy the stakeholders.

The objectives of this study were: - to determine the customers' expectations of KPLC service; to determine the perceived service quality of KPLC customers; to determine whether there are differences in the perceived service quality of the various categories of KPLC customers; and, to establish whether there is a match between the management's perspective and the customers' expectations of service quality in KPLC. The pertinent discussions, conclusions and recommendations are described below.

#### 5.1 Discussion

Regarding the customers' expectations of KPLC service, a grand mean of 4.332 was obtained from the likert scale scores of the respondents. This means that customers rate the importance of each service quality dimension relatively high. The low coefficient of variation of 19.4% is also an indication that the degree of agreement of the importance by different customers is quite high. The means of expected service range from 4.096 for 'understanding the customers' to 4.467 for 'reliability'. This shows a general agreement of a high degree of expected service along all the service quality dimensions. A similar study by Mwaura (2002) on the matatu industry and Ngatia (2000) on the retailing industry have almost the same means of expected service. This high level of expected service, also, agrees with the studies of Zeithmal, Berry and Parasuraman (1985) who initially identified the ten criteria used by customers in evaluating service quality. Indeed, their identified ten dimensions of service quality are confirmed as vital by this study.

KPLC and other utilities are service industries whose pivotal attributes, according to the P-C-P model of George and Shirley – Ann (1996) would be the service itself. Reliability and responsiveness which define the dependability, accuracy, and promptness would fit in the described pivotal attributes. The relatively high ranking of these two dimensions (first and

second) seem to agree with the postulates of George and Shirley – Ann (1996). However, their classification of the model into three specific layers of importance is not amplified by the results of this study which shows a generally same level of importance by all the service quality dimensions. These same revelations would be expected of other utility industries, which basically offer a service and whose expected service would rank along similar trends.

For the perceived service quality of all the KPLC customers, the mean score along the service quality dimensions, ranges from 3.364 to 3.800 with an overall mean of 3.573. With the high overall mean of expected service, the overall service quality gap is 0.759 or 17.53% which is quite significant. The highest gap is for the dimension of responsiveness, reliability, communication, e.t.c. These same dimensions are the ones in the high ranking of the expected service. There is, therefore, evident need for KPLC to address the issues relating to these service quality dimensions. This is measure of Gap 5 in the SERVQUAL model and KPLC needs to close this gap by endeavouring to undertake activities relating to closing all other service gaps in the service quality.

The coefficient of variation for the received service ranges from 25.3% to a high 35.8 % and an overall 29.7% ; this implies a generally high level of disagreement in the assessment of received service by different respondents confirming existence of cognitive biases in the assessments of received service. Comparatively, there is a relatively high level of agreement on the expected service whose coefficient of variation is an overall 19.4% (ranging between 15.3% to 25.6%).

Though a different industry, Maina (2000) found almost similar prevailing service gaps in her study of mobile phone services.

The perceived service quality for the different categories of customers indicate some difference across these different segment of customers whereby the overall gap is 17.39%, 15.77% and 13.71% for the domestic, small commercial and large commercial customers, respectively. All the categories rank reliability, responsiveness, credibility and security as relatively vital service quality dimensions. Equally, the order of importance for all the service quality dimensions follows similar order amongst all the three categories of customers.

The KPLC Large commercial customers receive personalized service and a relatively lower quality gap was expected; this is confirmed by the findings of this study. However, the gaps for the important dimensions of reliability and responsiveness are very significant, at 20 and



22.28%, respectively. There is, therefore, need for KPLC to further enhance this personalized service to the large commercial customers in the context of these vital dimensions of service quality.

Regarding the management's perspective and the customers' expectations of service quality in KPLC, it is evident from the results of the expected service and what KPLC management defined in the service quality dimensions (in the performance targets) that only about 41% of the wide area of service quality scope is covered by the management's data. The 41% is based on consideration of evidence of any one attribute of service quality from the defined determinants by KPLC management's performance targets. This is evidence of a wide gap (about 60%) of other service quality dimensions which are not being evaluated or monitored by KPLC. Though the management's service quality dimensions are mainly the ones which can be quantitatively measured, there is need to address the other service quality dimensions whose importance is clearly spelt out by the results of this study. However, there is consolation in the fact that KPLC has addressed the monitoring of three vital dimensions of service quality – Reliability, responsiveness and competence.

## 5.2 Conclusions

The following conclusions are pertinent for the findings of this study:

KPLC enjoys a generally long patronage of customers mainly because of its monopolistic status and minimal movements of customers from one location to the other. This is confirmed by the relatively high percentage of 64.3% of the respondents who have operated accounts for more than five years.

KPLC customers expect a relatively high level of service along all service quality dimensions as confirmed by the high mean of scores of respondents of 4.096 to 4.467 (highest expected value being 5.00). Customers seem to agree to a high extent on this level of expected service as the overall coefficient of variation is 19.4%. Thus, all the service quality dimensions are important in determining the service quality of KPLC customers. The utility industry deal with service to almost same customers and a similar trend would be exhibited.

The perceived service quality of KPLC customers shows an overall gap of 17.53% and there is a gap ranging from 11.92% to 21.21% on all the service quality dimensions. However, there is a relatively high disagreement of this gap amongst customers which shows an overall coefficient of variation of 29.7% (compared with the above 19.4% of expected service). Different categories of customers perceive different quality levels of service as the overall gap is 17.39%,

15.77% and 13.71% for domestic, small commercial and large commercial customers, respectively.

KPLC management's performance targets partly include the four important service quality dimensions of reliability, responsiveness, competence and access but does not include the six service quality dimensions of credibility, security, courtesy, communication, tangibles and understanding the customer. This in effect implies a coverage of only about 40% leaving out a gap of about 60%.

### 5.3 Recommendations

Further to the findings of this study, the following recommendations are pertinent:

Organisations all over the world are constantly competing for market share to enhance profitability. Global forces of change are targeted to terminating the monopolistic status of the regulated industries. KPLC and other utilities, therefore, need to utilize the current high level of guaranteed patronage of customers as an opportunity for business, before the industries are exposed to competitive forces after deregulation and entry of other competitors.

The perceived service quality for all customers show a very significant overall quality gap of 0.759 or 17.53% and the highest gap is on the important dimensions of reliability, responsiveness, communication, e.t.c. All customers agree on a high level of expected service along all service quality dimensions. KPLC and other utilities need to ensure that their performance programs include the monitoring and evaluation of attributes and tasks relating to all the service quality dimensions. In particular, they need to address the issues relating to closing all the service gaps by:- Enhancing perception of feasibility studies; Enhancing commitment to service quality; Enhancing communication between operations, marketing and human resources as well as across divisions; and, Enhancing empowerment of personnel in close proximity to customers.

### LIMITATIONS OF THE STUDY

The general observation along all categories of customers is that the service gaps are significantly high and requires to be addressed through effective service quality enhancement programs, including a shift towards personalised service which has evidently improved the relative perceived service quality of large commercial customers. However, though large commercial customers receive personalised service, the quality gaps of the important dimensions of reliability and responsiveness are quite significant at 20.00% and 22.28%. There is, therefore, need for KPLC to further enhance this personalized service to the large commercial customers in the context of the high quality gap in these vital dimensions of service quality. The

current trends in the market place are a shift towards personalised service and this same recommendation would be relevant to the other sectors of the utility industry.

With regard to specific service quality attributes, KPLC customers assessed the gaps of the accessibility to emergency services and the dependability of emergency crews at 24% and 26%, respectively ; these are the highest values of the quality gaps and KPLC, therefore, needs to address the effectiveness of the operations of emergency services. Also, willingness, dependability and promptness of solving complaints have quality gaps in excess of 20% and KPLC needs to address this significant gap in service quality. The other gap which is more than 20% is on caring and understanding of the staff, KPLC needs to inculcate these attributes in their customer services' staff.

#### SUGGESTIONS FOR FURTHER RESEARCH

While it may not be cost effective to carry out marketing research for evaluation of the perceived service on monthly basis, management needs to be committed to conducting the marketing reasearch frequently, even if annually or biannually. This will throw light to the various areas requiring attention and address frequent evaluation and monitoring of most of the service quality dimensions.

In undertaking the decentralization of services within the restructuring program, KPLC management's focus on service quality was not in doubt. However, feedback from the customer's priority areas and critical requirements needed to be determined from a marketing research survey so as to address the relevant areas without loss of focus.

"Perception in service quality is reality", there is every need to evaluate the expectations and then devise customer service enhancement programs on the basis of requirements and expectations of the customers.

This cause of action would be equally relevant to other utility industries, whose services cannot ignore the importance of determining expectations and perceptions of customers.

#### LIMITATIONS OF THE STUDY

The results of this study should be interpreted in the context of a number of study limitations, namely:-

The study did not consider a number of factors which may influence perceptions; among them, income level of education, general awareness, and other variables that can be used to segment customers.

The study was conducted within a particular season which may have biased the results: for instance, if it was a rainy/windy season when system breakdowns are more, the results may have been different. Possibly, the data could have been collected at various times of the year and then compared to give more accurate and objective information.

The study relied on judgements of customers' perception of service quality, which are subjective to various cognitive biases, these might have had an effect on the results.

Though the findings of the study are broadly relevant to the utility industry sector, other factors like the difference in the sensitivity of the need of service amongst electricity, telephone and water services may reflect slight variations in the expectations and perceptions of customers.

## **SUGGESTIONS FOR FURTHER RESEARCH**

The aim of this study was to determine the customers' expectations of service, customers' perceived service quality and also compare the latter with Management's perspective at onset of decentralization of services during the KPLC's restructuring program. In the context of the above limitations of the study, it is suggested that:-

Further research could be done in future which considers classification of customers on the basis of their incomes, occupation and level of education in order to establish whether there are significant differences.

The differences in the degree of need for electricity, telephone and water may reveal differences in expectations of service and hence perceived service quality. Research to explore these differences may be useful.

This study revealed the relative importance of each service quality dimension. The P-C-P model posits the need to differentiate the service quality dimensions on the basis of the different weights of their importance in terms of pivotal, core and peripheral attributes. A study to further investigate relevance of P-C-P's classification with actual measurements would be useful.

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**The Kenya Power & Lighting  
Co. Ltd.**

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**Our Ref: STAFF/42/DWM/lwa**

**Your Ref:**

5<sup>th</sup> June, 2003

Dean of Students  
Faculty of Commerce  
University of Nairobi  
P.O. Box 30197  
**Nairobi**

Dear Sir/Madam,

**RESEARCH PROJECT BY JOSEPH K. NJOROGE, MBA STUDENT**

Mr. Joseph Njoroge who is an employee of this Company and an MBA student at the University of Nairobi has informed us that he intends to undertake a Research Project on: **Customers' Perception of Service Quality – The Case of Kplc After Decentralisation of Services.**

We wish to confirm that we did not carry out any such customer survey or research towards establishment of the customers' perception of our service before and after we carried out the decentralisation of services in the restructuring process.

The proposed project is, therefore, relevant to our business and will add value to our customer service delivery. This is therefore to confirm that we support his proposal.

Yours faithfully,

For: **THE KENYAPOWER & LIGHTING CO. LTD.**

  
**DAVID WAMITI**

For: **CHIEF MANAGER, HUMAN RESOURCES & ADMIN.**

## Appendix 2

THE KENYA POWER AND LIGHTING COMPANY LIMITED  
DIVISIONAL KEY TARGETS FOR JULY 2003

PLAN/ACTIVITY/PERFORMANCE INDICATOR	UNIT	TARGET AS AT 30/06/2004	TARGET FOR MONTH	ACTUAL THIS MONTH	VAR. %	CUMULATIVE TARGET YTD	ACTUAL YTD	VAR. %	REASONS FOR VARIANCE Jul-03
<b>1. CUSTOMER SERVICE</b>									
1 Distribution Efficiency	%	83.0%	83.0%	75.05%	-9.6%	83.0%	75.05%	-9.58%	Below target
2 Unit Yield	Shs/unit	6.00	6.00	5.88	-0.02	6.00	5.88	-2.00%	Within target
3 Revenue Collection % of prev. mth' non-GOK bills	Per Cent	100.0%	100.0%	101.00%	1.0%	100.0%	101.0%	1.00%	Above target
4 Debt Age: Ordinary Customers	Month	2.10	2.10	3.00	-42.9%	2.10	3.00	-42.86%	Below target
Industrial Customers	Month	1.10	1.10	1.20	-9.1%	1.10	1.20	-9.09%	Below target
Government	Month	4.00	4.00	9.90	147.4%	4.00	9.90	147.38%	Below target
Parastatals - Essential	Month	4.00	4.00	5.71	-42.8%	4.00	5.71	-42.76%	Below target due
Parastatals - Non Essential	Month	1.10	1.10	1.02	6.9%	1.10	1.02	6.88%	Above target
Local Authorities	Month	3.00	3.00	4.26	-41.9%	3.00	4.26	-41.95%	Slightly below target
Embassies	Month	2.00	2.00	1.20	39.9%	2.00	1.20	39.93%	Above target
VIPs	Month	2.00	2.00	1.13	43.5%	2.00	1.13	43.52%	Above target
ALL	Month	2.00	2.00	2.46	-23.0%	2.00	2.46	-23.00%	Below target
5 Average Meter Reading Time	Day	1.60	1.60	2.11	-31.9%	1.60	2.11	-31.88%	Below target
** 6 Meter Reading Coverage	Per Cent	99.00%	99.00%	97.39%	-1.6%	99.0%	97.4%	-1.63%	Below target
** 7 Meter Reading Accuracy -	Per Cent	2.00%	2.00%	4.00%	-100.0%	2.0%	4.0%	-100.00%	Below target
8 Meters with zero consumption	Number			44,314	-	-	-	-	Monitoring purposes only
** 9 Billing Average Time	Day	1.50	1.20	1.66	-38.3%	1.20	1.66	-38.33%	Below target.
** 10 Average Time To Solve Billing Anomalies	Day	2.07	1.50	2.24	-49.3%	1.50	2.24	-49.33%	Below target.
** 11 Average Waiting Time For New Connection upon Payment	Day	60.0	60.00	75.63	-26.1%	60.00	75.63	-26.05%	Delays have continued due to shortage of some materials
12 Average Disconnection Time upon Production of Service Order	Day	1.00	1.00	1.00	0.0%	1.00	1.00	0.00%	Within target
13 Per cent of Disconnection Service Orders Actioned	Per Cent	100.0%	100.0%	94.00%	-6.0%	100.0%	94.0%	-6.00%	Within target
** 14 Percentage orders reconnected outside one day	Per Cent	10%	10%	5.93%	40.7%	10.0%	5.93%	40.70%	Above target
15 Resolution of zero consumption meters in correct situation (Total No. 42,364)	Per Cent	100%	100%	8.40%	-91.6%	100.0%	8.4%	-91.60%	Below target.
16 Re-billed amount as per cent of monthly billing - maximum	Per Cent	1.0%	1.0%	0.01%	99.0%	1.0%	0.0%	99.00%	Above target
17 Routine inspection (supplies visited per month)	Per Cent	100.00%	8.33%	3.00%	-64.0%	8.3%	3.0%	-63.99%	Introduction of new strategy.
18 Debt collection of Finalised Accounts	Million (Kshs)	693.00	57.75	52.14	-9.71%	57.75	52.14	-9.71%	Below target
19 Customer Growth	NO.	150,000	12,500	3,853	-69.18%	12,500	3,853	-69.18%	Below target
<b>2. OPERATIONS AND MAINTENANCE</b>									
<b>Supply Quality Improvement</b>									
** 1 Average Repair Response Time to Service Calls	Hours	4.00	4.00	5.30	-32.5%	4.00	5.30	-32.50%	Performance is reflective of wily seasonal
** 2 Average Restoration Time for programmed Interruptions	Hours	8.00	8.00	7.00	12.5%	8.00	7.00	12.50%	Average for all Regions (excl. C. R. & N. Rift. seasonal Variation
** 3 Maximum Number of Transformer Failures	No./mnt h	48.00	48.00	56.00	-16.7%	48.00	56.00	-16.67%	
<b>3. TRANSMISSION</b>									
1 Transmission Efficiency	Per cent	96.5%	96.5%	95.8%	-0.8%	96.5%	95.8%	-0.78%	Close to target
2 Transmission Line Faults 220 kV	No/100 km/yr	2.00	0.20	0.00	100.0%	0.20	0.00	100.00%	Above target
3 Transmission Line Faults 132 kV	No/100 km/yr	4.00	0.30	0.10	66.7%	0.30	0.10	66.67%	Above target
<b>4. HUMAN RESOURCES</b>									
1 Customer to Staff Ratio	Ratio	117	101	105	3.5%	101	105	3.53%	Target met

\*\* Indicators relevant to the Service Quality

Source: KPLC Monthly Report by Performance Monitoring, Research & Development Division (July, 2003)



## Appendix 3

The service quality indicators extracted from the July, 2003 “Divisional key targets report of KPLC – Performance indicators” are as follows:-

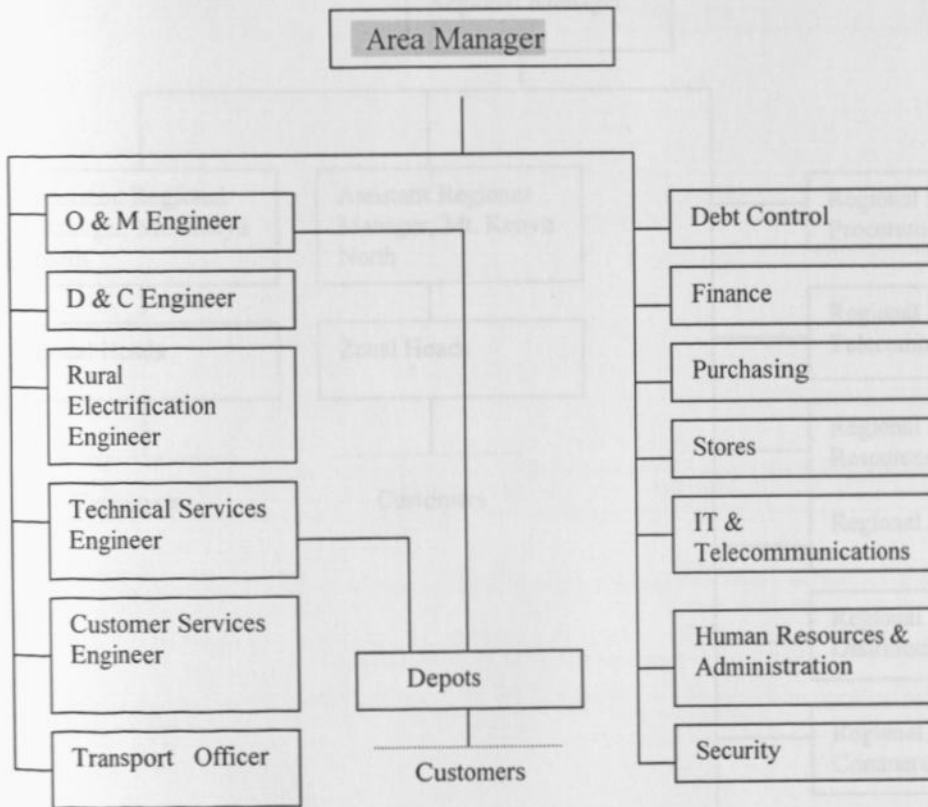
- (i) Meter reading coverage - impacting on correctness of readings which are used to generate related bills.
- (ii) Meter reading accuracy – relating to correctness of the generated bills.
- (iii) Billing average time –relating to promptness of the billing.
- (iv) Average time to solve billing anomalies – relating to promptness in solving customers’ complaints (of incorrect billing).
- (v) Average waiting time for new connection upon payment - relating to promptness of service.
- (vi) Percentage orders reconnected outside one day – relating to speed and promptness of service.
- (vii) Average repair response time to service calls – relating to speed and promptness of service.
- (viii) Average restoration time for programmed interruptions – relating to promptness of service.
- (ix) Maximum number of transformer failures – relating to frequency of interruptions.

*Source: Extracted from the Appendix 2 (KPLC monthly report by Performance monitoring, Research & Development division (July, 2003)*



## Existing Areas Organisation Structure

### Mt. Kenya Example

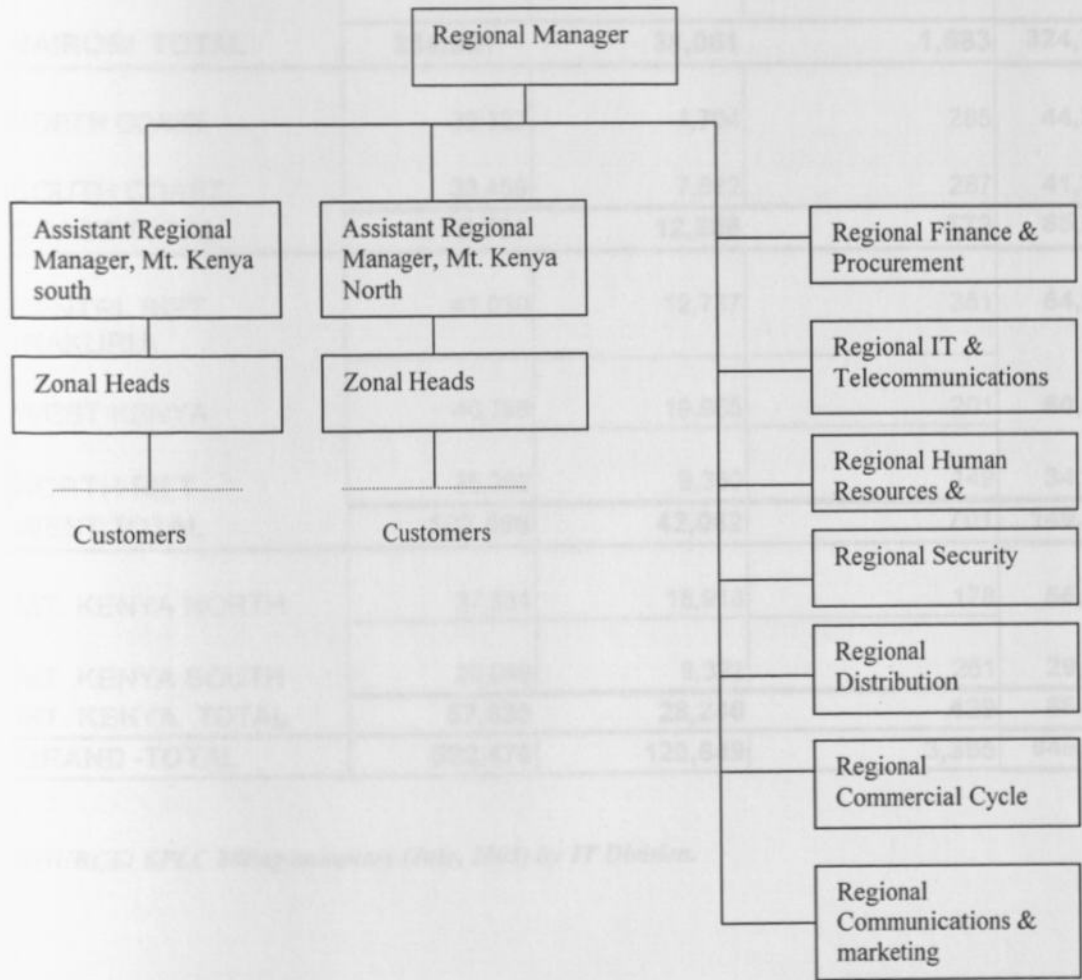


SOURCE: KPLC Presentation to Managers (11<sup>th</sup> April, 2001) by Human Resource Division



## New Regional Organisation Structure

### Mt. Kenya Example



SOURCE: KPLC Presentation to Managers (11<sup>th</sup> April, 2001) by Human Resource Division

Appendix 6

KENYA POWER AND LIGHTING CO. LTD.  
(SEGMENTATION OF CUSTOMERS)

AREA	TARIFFS (SEGMENTS OF CUSTOMERS)			TOTAL
	DOMESTIC	SMALL COMMERCIAL	LARGE COMMERCIAL	
NAIROBI SOUTH	84,469	17,992	945	103,406
NAIROBI WEST	90,950	9,382	378	100,710
NAIROBI NORTH	109,542	10,687	360	120,589
<b>NAIROBI TOTAL</b>	<b>284,961</b>	<b>38,061</b>	<b>1,683</b>	<b>324,705</b>
NORTH COAST	39,322	4,704	285	44,311
SOUTH COAST	33,459	7,582	287	41,328
<b>COAST TOTAL</b>	<b>72,781</b>	<b>12,286</b>	<b>572</b>	<b>85,639</b>
CENTRL RIFT (NAKURU)	41,039	12,737	351	54,127
WEST KENYA	40,796	19,965	201	60,962
NORTH-RIFT	25,263	9,360	149	34,772
<b>WEST TOTAL</b>	<b>107,098</b>	<b>42,062</b>	<b>701</b>	<b>149,861</b>
MT. KENYA NORTH	37,581	18,918	178	56,677
MT. KENYA SOUTH	20,049	9,322	261	29,632
<b>MT. KENYA TOTAL</b>	<b>57,630</b>	<b>28,240</b>	<b>439</b>	<b>86,309</b>
<b>GRAND -TOTAL</b>	<b>522,470</b>	<b>120,649</b>	<b>3,395</b>	<b>646,514</b>

SOURCE: KPLC billing summary (July, 2003) by IT Division.

Margaret A. Ombok,  
Lecturer, Dept of Business  
-Administration  
(Supervisor of the Project)

JOSEPH K. NJOROGE  
C/O UNIVERSITY OF NAIROBI  
LOWER KABETE CAMPUS  
P.O BOX 30197  
NAIROBI

4<sup>th</sup> September, 2003

Dear Sir/Madam,

RE: REQUEST FOR RESEARCH DATA

I am a post graduate student in the Faculty of Commerce, University of Nairobi. I am conducting a Management Research on "Perceived service quality "The Case of KPLC Customers after decentralisation of services".

In order to carry out the Research, you are selected to form part of the study. I, therefore, request you to assist by filling in the attached questionnaire. The information you give will be treated in strict confidence and is needed purely for academic purposes. In no way will your name appear in the final report.

A copy of the final report will be made available to you upon request.

Your assistance and co-operation will be highly appreciated.

Yours Sincerely,

.....  
Joseph K. Njoroge  
(Student)

.....  
Margaret A. Ombok,  
Lecturer, Dept of Business  
-Administration  
(Supervisor of the Project)

# QUESTIONNAIRE

Please respond to the following questions in parts A, B, and C, to the best of your ability and as per instructions in each part.

## **PART A: General Information**

Please write or tick (√) where appropriate.

A1. Your name .....(Optional)  
or Name of your Organization .....(Optional)

A2. Your Account Number.....(Optional)

A3. Where is the location of your premises/business?. (Estate/District).

.....

A4. Please indicate the type of the account you operate.

- Domestic ( )
- Small Commercial ( )
- Large Commercial ( )

A5. Please indicate the period you have operated the account in A2, above.

- Below 2 years ( )
- Between 2 to 5 years ( )
- Above 5 years ( )

## PART B

Please indicate on a scale 1 to 5, below the extent to which you consider the following attributes as important to you in evaluation of services offered by KPLC.

Please, Tick (✓) appropriate Box

		Very Important 5	Important 4	Somewhat Important 3	Not important 2	Not important at all 1
1	Ability to offer dependable services					
2	Ability of Emergency crew to solve supply problems correctly first time					
3	Ability of commercial office staff to correctly solve complaints					
4	Ability to generate and send correct bills					
5	Willingness to help customers					
6	Provision of prompt service					
7	Willingness and promptness in solving complaints					
8	Knowledge of employees on the services they offer					
9	Possession of skills by field staff in solving problems					
10	Courteous, friendly and polite employees					
11	Trustworthness, believability and honesty of employees					
12	Guarantee of the work done by service crews					
13	Feeling of security with KPLC staff when undertaking works in your premises					
14	Feeling of security when in KPLC premises					
15	Feeling of security when all bills are paid (guarantee that supply will not be disconnected)					
16	Proximity and accessibility to KPLC Managers and Supervisors when in need					
17	Convenience of official opening hours					
18	Convenience of location of offices					
19	Accessibility to Emergency offices through telephone during times of supply interruptions at all times					
20	Accessibility to complaints' offices by personal visits					
21	Caring and understanding staff					
22	Feedback of queries by staff					
23	Caring and individualized attention					
24	Flexible staff towards customers' schedules					
25	Appearance of service staff					
26	Safety and appearance of KPLC facilities and equipment					
27	Appearance and understability of electricity bills					

## PART C

Please indicate on the scale 1 to 5, below how well KPLC, as your Service Provider, has performed on the following attributes.

Please, tick (✓) appropriate box.

		Very Well 5	Well 4	Fairly 3	Poorly 2	Very poorly 1
1	Ability to offer dependable services					
2	Ability of Emergency crew to solve supply problems correctly first time					
3	Ability of commercial office staff to correctly solve complaints					
4	Ability to generate and send correct bills					
5	Willingness to help customers					
6	Provision of prompt service					
7	Willingness and promptness in solving complaints					
8	Knowledge of employees on the services they offer					
9	Possession of skills by field staff in solving problems					
10	Courteous, friendly and polite employees					
11	Trustworthiness, believability and honesty of employees					
12	Guarantee of the work done by service crews					
13	Feeling of security with KPLC staff when undertaking works in your premises					
14	Feeling of security when in KPLC premises					
15	Feeling of security when all bills are paid (guarantee that supply will not be disconnected)					
16	Proximity and accessibility to KPLC Managers and Supervisors when in need					
17	Convenience of official opening hours					
18	Convenience of location of offices					
19	Accessibility to Emergency offices through telephone during times of supply interruptions at all times					
20	Accessibility to complaints' offices by personal visits					
21	Caring and understanding staff					
22	Feedback of queries by staff					
23	Caring and individualized attention					
24	Flexible staff towards customers' schedules					
25	Appearance of service staff					
26	Safety and appearance of KPLC facilities and equipment					
27	Appearance and understability of electricity bills					

**THANK YOU FOR YOUR PARTICIPATION AND SUPPORT:**

Proportionate service quality Gap,  $\frac{M_1 - M_2}{M_1} \times 100\%$   
(in percentage)



## Appendix 8

### Formulae for the various Variables

**Part B of Questionnaire:** Measures of customers' Expected service

$F_e$  - denotes, frequencies of scores obtained from the likert scale

$X_e$  - denotes the actual Scores on likert scale Continuum (i.e. 1 to 5)

$$\text{Means, } M_e = \frac{\sum f_e x_e}{\sum f_e}$$

$$\text{Variance, } V_e = \frac{\sum f_e x_e^2}{\sum f_e} - \left( \frac{\sum f_e x_e}{\sum f_e} \right)^2$$

Standard Deviation,  $S_e = \sqrt{V_e}$  or SQRT of  $V_e$

$$\text{Coefficient of Variation, } C_e = \frac{S_e}{M_e} \times 100\%$$

**Part C of the Questionnaire:** Measures of customers' Received service

$F_r$  - denotes, frequencies of scores obtained from the likert scale.

$X_r$  - denotes, the actual scores on the likert scale continuum (1 to 5)

$$\text{Means } M_r = \frac{\sum f_r x_r}{\sum f_r}$$

$$\text{Variance, } V_r = \frac{\sum f_r X_r^2}{\sum f_r} - \left( \frac{\sum f_r X_r}{\sum f_r} \right)^2$$

Standard deviation,  $S_r = \sqrt{V_r}$  or SQRT of  $V_r$

$$\text{Coefficient of Variation, } C_r = \frac{S_r}{M_r} \times 100\%$$

Service Quality Gap,  $M_e - M_r$

Proportionate service quality Gap,  
(in percentage)  $\frac{M_e - M_r}{M_e} \times 100\%$

Appendix 9

DATA ANALYSIS : Service Quality - Score Sheet (All Customers)

Dimension (Generic)	Dimension (Expanded)	All Attributes	Durations of Customers & frequency of each duration					Customers' measure of Expected service								Customers' Measure of Received Service										
								Scores and Frequency of scores (Fe)					Means (M <sub>e</sub> ); Variance (V <sub>e</sub> ); Standard deviation (S <sub>e</sub> )				Coeff. of variation (C <sub>e</sub> )				Scores and Frequency of scores (Fr)					Means (M <sub>r</sub> ); Variance (V <sub>r</sub> ); Standard deviation (S <sub>r</sub> )
			<2yrs	>2 yrs	>5yrs	Scores					Variables				Scores					Variables						
			& <5yrs	5	4	3	2	1	M <sub>e</sub>	V <sub>e</sub>	S <sub>e</sub>	C <sub>e</sub>	5	4	3	2	1	M <sub>r</sub>	V <sub>r</sub>	S <sub>r</sub>	C <sub>r</sub>					
Reliability	Reliab.	1	51	58	197	191	83	25	4	3	4.49	0.61	0.78	17.4%	61	117	86	29	13	3.60	1.08	1.04	28.9%			
			2	189	81	24	7	5	4.44	0.74	0.86	19.3%	50	89	93	46	28	3.28	1.38	1.17	35.8%					
			3	170	103	21	8	4	4.40	0.69	0.83	18.9%	49	106	95	40	16	3.43	1.14	1.07	31.1%					
			4	196	84	21	5	0	4.54	0.48	0.70	15.3%	79	113	68	20	9	3.81	1.03	1.01	26.6%					
			5	169	100	32	5	0	4.42	0.55	0.74	16.8%	59	112	98	27	10	3.60	1.00	1.00	27.8%					
Responsiveness	Respo.	6	182	93	25	5	1	4.47	0.55	0.74	16.6%	51	89	122	31	13	3.44	1.04	1.02	29.6%						
			7	170	101	26	5	4	4.40	0.66	0.82	18.5%	40	113	105	35	13	3.43	0.99	1.00	29.0%					
Assurance	Compet.	8	164	100	35	6	1	4.37	0.62	0.79	18.0%	57	121	101	25	11	3.60	0.97	0.99	27.4%						
			9	165	111	21	7	2	4.41	0.59	0.77	17.5%	61	104	113	27	4	3.62	0.88	0.94	26.0%					
			10	152	102	43	6	3	4.29	0.72	0.85	19.8%	41	122	97	32	14	3.47	1.00	1.00	28.8%					
			11	180	86	32	6	2	4.42	0.65	0.81	18.2%	62	106	100	25	11	3.60	1.03	1.01	28.2%					
	Courtey Credib.	12	173	98	27	3	5	4.41	0.67	0.82	18.6%	71	109	97	22	7	3.70	0.95	0.98	26.4%						
			13	177	100	22	6	1	4.46	0.55	0.74	16.6%	80	120	73	30	3	3.80	0.94	0.97	25.5%					
			14	142	114	36	11	3	4.25	0.75	0.87	20.5%	93	118	64	25	6	3.87	1.00	1.00	25.8%					
			15	176	101	22	6	1	4.45	0.55	0.74	16.6%	100	99	68	29	9	3.83	1.17	1.08	28.2%					
Empathy	Access	16	141	114	42	8	1	4.26	0.66	0.81	19.1%	64	88	100	31	23	3.45	1.32	1.15	33.3%						
			17	133	124	35	9	5	4.21	0.77	0.88	20.8%	87	123	71	17	8	3.86	0.96	0.98	25.3%					
			18	135	118	38	11	4	4.21	0.78	0.89	21.1%	71	119	85	20	11	3.72	1.01	1.01	27.1%					
			19	189	91	20	1	5	4.50	0.60	0.77	17.2%	64	93	81	41	27	3.41	1.46	1.21	35.4%					
	Commu.	20	139	111	45	6	5	4.22	0.78	0.88	20.9%	51	97	98	44	16	3.40	1.18	1.08	31.9%						
			21	133	131	32	5	5	4.25	0.69	0.83	19.6%	52	102	103	38	11	3.48	1.05	1.03	29.5%					
			22	139	115	40	8	4	4.23	0.75	0.87	20.5%	46	106	88	47	19	3.37	1.21	1.10	32.7%					
			23	124	119	46	12	5	4.13	0.84	0.92	22.2%	50	102	92	47	15	3.41	1.17	1.08	31.7%					
Und.Cus.	24	118	121	45	13	9	4.07	0.96	0.98	24.1%	48	83	111	47	17	3.32	1.17	1.08	32.6%							
		25	103	128	44	22	9	3.96	1.03	1.02	25.6%	55	112	93	32	14	3.53	1.09	1.05	29.6%						
Tangibles	Tangibl.	26	169	97	29	7	4	4.37	0.72	0.85	19.4%	78	101	81	30	16	3.64	1.25	1.12	30.7%						
			27	162	106	28	8	2	4.37	0.65	0.81	18.5%	98	99	75	24	10	3.82	1.14	1.07	28.0%					
Total						4281	2832	856	200	93	4.33	0.71	0.84	19.4%	1718	2863	2458	861	354	3.57	1.13	1.06	29.7%			

Source: Research Data

Appendix 10

DATA ANALYSIS : Service Quality Variables  
(All customers)

Dimension (Expanded)		All Attributes						
			$M_e$	$V_e$	$M_r$	$V_r$	$M_e - M_r$	$M_e - M_r / M_e\%$
<b>Reliability</b>								
$M_e$	4.4665	}	4.487	0.781	3.601	1.041	0.886	19.74%
$M_r$	3.5308		4.444	0.859	3.284	1.175	1.160	26.10%
$M_e - M_r$	0.9357		4.395	0.831	3.431	1.068	0.964	21.93%
$M_e - M_r / M_e\%$	20.949%		4.539	0.696	3.806	1.014	0.733	16.15%
Ce	17.850%							
<b>Responsiveness</b>								
$M_e$	4.4281	}	4.415	0.742	3.598	0.999	0.817	18.50%
$M_r$	3.4891		4.471	0.741	3.438	1.018	1.033	23.10%
$M_e - M_r$	0.9390		4.399	0.815	3.431	0.995	0.967	21.99%
$M_e - M_r / M_e\%$	21.205%							
Ce	17.290%							
<b>Competence</b>								
$M_e$	4.3889							
$M_r$	3.6075							
$M_e - M_r$	0.7814	}	4.373	0.787	3.597	0.985	0.776	17.74%
$M_e - M_r / M_e\%$	17.804%		4.405	0.771	3.618	0.940	0.787	17.87%
Ce	17.72%							
<b>Courtesy</b>								
Ce	19.80%	10	4.288	0.849	3.471	1.000	0.817	19.05%
<b>Credibility</b>								
Ce	18.20%	11	4.425	0.806	3.602	1.014	0.823	18.60%
<b>Security</b>								
$M_e$	4.3913	}	4.408	0.820	3.703	0.977	0.706	16.01%
$M_r$	3.7997		4.458	0.741	3.797	0.969	0.660	14.81%
$M_e - M_r$	0.5916		4.245	0.868	3.873	1.000	0.373	8.78%
$M_e - M_r / M_e\%$	13.473%		4.454	0.741	3.826	1.080	0.628	14.10%
Ce	18.070%							
<b>Access</b>								
$M_e$	3.4353	}	4.261	0.815	3.454	1.149	0.807	18.94%
$M_r$	2.8889		4.212	0.877	3.863	0.977	0.350	8.30%
$M_e - M_r$	0.5464		4.206	0.886	3.716	1.007	0.490	11.66%
$M_e - M_r / M_e\%$	15.906%		4.497	0.772	3.412	1.207	1.085	24.13%
Ce	19.800%							
<b>Communication</b>								
$M_e$	4.2402							
$M_r$	3.4232							
$M_e - M_r$	0.8170	}	4.248	0.831	3.477	1.026	0.771	18.15%
$M_e - M_r / M_e\%$	19.268%		4.232	0.868	3.369	1.102	0.863	20.39%
Ce	20.010%							
<b>UnderStanding the Customer</b>								
$M_e$	4.09641							
$M_r$	3.36438							
$M_e - M_r$	0.73203	}	4.127	0.918	3.408	1.082	0.719	17.42%
$M_e - M_r / M_e\%$	17.870%		4.065	0.981	3.320	1.083	0.745	18.33%
Ce	23.160%							
<b>Tangibles</b>								
$M_e$	4.2331							
$M_r$	3.7288	}	3.961	1.015	3.529	1.045	0.431	10.89%
$M_e - M_r$	0.5044		4.373	0.847	3.637	1.118	0.735	16.82%
$M_e - M_r / M_e\%$	11.915%		4.366	0.806	3.820	1.068	0.546	12.50%
Ce	21.130%							
<b>Total</b>			4.332	0.709	3.573	1.127	0.759	17.53%

Source: Service quality scores sheet for all customers (Appendix 9)

Appendix 11 DATA ANALYSIS : Service Quality Scores sheet (Domestic Customers)

Dimension (Generic)	Dimension (Expanded)	All Attributes	Durations of Customers & frequency of each duration	Customers' measure of Expected service										Customers' Measure of Received Service											
				Scores and Frequency of scores (Fe)					Means(M <sub>e</sub> );Variance(V <sub>e</sub> ); Standard deviation (Se) Coeff. of variation (C <sub>e</sub> )					Scores and Frequency of scores (Fr)				Means(M <sub>r</sub> );Variance (V <sub>r</sub> ); Standard deviation (Sr) Coeff. of variation (C <sub>r</sub> )							
				<2yrs	>2 yrs & <5yrs	>5yrs	Scores					Variables					Scores					Variables			
							5	4	3	2	1	M <sub>e</sub>	V <sub>e</sub>	S <sub>e</sub>	C <sub>e</sub>	5	4	3	2	1	M <sub>r</sub>	V <sub>r</sub>	S <sub>r</sub>	C <sub>r</sub>	
Reliability	Reliab.	1 2 3 4 5	39 52 155	148	71	20	4	3	4.45	0.65	0.81	18.2%	58	110	82	29	12	3.59	1.09	1.04	29.0%				
				148	69	19	6	4	4.43	0.74	0.86	19.4%	47	85	88	46	25	3.29	1.36	1.17	35.5%				
				133	87	16	7	3	4.38	0.68	0.83	18.9%	46	103	89	38	15	3.44	1.13	1.06	31.0%				
				153	69	19	5	0	4.50	0.53	0.73	16.1%	71	108	67	19	9	3.78	1.03	1.01	26.8%				
				130	80	31	5	0	4.36	0.60	0.78	17.8%	55	108	93	26	9	3.60	0.98	0.99	27.6%				
Responsiveness	Respon.	6 7		143	75	22	5	1	4.44	0.60	0.77	17.4%	47	86	116	30	12	3.43	1.02	1.01	29.4%				
				136	81	22	4	3	4.39	0.66	0.81	18.5%	37	111	97	34	12	3.44	0.98	0.99	28.8%				
Assurance	Compet.	8 9		133	78	30	4	1	4.37	0.62	0.79	18.1%	53	117	95	25	10	3.59	0.96	0.98	27.3%				
				128	92	18	6	2	4.37	0.62	0.79	18.1%	57	98	108	27	4	3.60	0.89	0.94	26.2%				
	Courtesy Credib.	10 11		122	79	37	6	2	4.27	0.74	0.86	20.2%	39	116	90	32	14	3.46	1.03	1.01	29.3%				
				139	71	30	4	2	4.39	0.68	0.82	18.7%	57	100	96	25	11	3.58	1.04	1.02	28.5%				
	Security	12 13 14 15		128	86	25	3	4	4.35	0.70	0.84	19.2%	65	105	94	21	6	3.69	0.93	0.96	26.1%				
				138	84	17	6	1	4.43	0.58	0.76	17.2%	75	113	71	29	3	3.78	0.95	0.97	25.7%				
				115	91	28	10	2	4.25	0.76	0.87	20.5%	86	113	61	25	6	3.85	1.01	1.01	26.1%				
				138	84	17	6	1	4.43	0.58	0.76	17.2%	91	95	66	29	9	3.79	1.18	1.09	28.6%				
Empathy	Access	16 17 18		104	100	35	7	0	4.22	0.63	0.79	18.8%	60	85	95	30	21	3.46	1.30	1.14	33.0%				
				103	106	26	7	4	4.21	0.74	0.86	20.5%	82	117	68	16	8	3.86	0.96	0.98	25.4%				
				108	97	30	7	4	4.21	0.78	0.88	20.9%	65	114	83	19	10	3.70	0.99	1.00	26.9%				
	Commun.	19 20 21		147	77	17	1	4	4.47	0.61	0.78	17.4%	61	89	78	38	25	3.42	1.44	1.20	35.1%				
				110	92	35	5	4	4.22	0.77	0.88	20.8%	48	94	91	43	15	3.40	1.18	1.08	31.9%				
				112	99	27	4	4	4.26	0.71	0.84	19.7%	49	97	96	38	11	3.46	1.07	1.04	29.9%				
	Und.Cus.	22 23 24		116	87	33	7	3	4.24	0.77	0.88	20.7%	43	104	83	44	17	3.38	1.19	1.09	32.2%				
				102	94	36	10	4	4.14	0.85	0.92	22.3%	47	99	86	45	14	3.41	1.16	1.08	31.6%				
				98	91	39	10	8	4.06	1.01	1.00	24.7%	46	81	105	44	15	3.34	1.15	1.07	32.1%				
Tangibles	Tangibl.	25 26 27		86	103	30	19	8	3.98	1.07	1.04	26.1%	51	107	88	32	13	3.52	1.09	1.04	29.6%				
				134	80	23	6	3	4.37	0.71	0.84	19.3%	71	98	77	30	15	3.62	1.24	1.11	30.8%				
				127	89	21	7	2	4.35	0.67	0.82	18.8%	88	97	73	23	10	3.79	1.13	1.07	28.1%				
Total								3379	2312	703	171	77	4.32	0.72	0.85	19.7%	1595	2750	2336	837	331	3.57	1.12	1.06	29.7%

Source: Research Data

Appendix 12

DATA ANALYSIS : Service Quality Variables

(Domestic customers)

Dimension (Expanded)		All Attributes							
				M <sub>e</sub>	V <sub>e</sub>	M <sub>r</sub>	V <sub>r</sub>	M <sub>e</sub> -M <sub>r</sub>	M <sub>e</sub> -M <sub>r</sub> /M <sub>e</sub> %
<b>Reliability</b>									
M <sub>e</sub>	4.4411	}	1	4.451	0.809	3.595	1.042	0.857	19.25%
M <sub>r</sub>	3.5234		2	4.427	0.861	3.285	1.166	1.142	25.79%
M <sub>e</sub> -M <sub>r</sub>	0.9177		3	4.382	0.827	3.436	1.064	0.946	21.58%
M <sub>e</sub> -M <sub>r</sub> /M <sub>e</sub> %	20.663%		4	4.504	0.726	3.777	1.013	0.727	16.13%
<b>Responsiveness</b>									
M <sub>e</sub>	4.3984	}	5	4.362	0.778	3.598	0.991	0.764	17.51%
M <sub>r</sub>	3.4891		6	4.439	0.772	3.433	1.011	1.006	22.66%
M <sub>e</sub> -M <sub>r</sub>	0.9093		7	4.394	0.813	3.436	0.991	0.958	21.80%
M <sub>e</sub> -M <sub>r</sub> /M <sub>e</sub> %	20.673%								
<b>Competence</b>									
M <sub>e</sub>	4.3740								
M <sub>r</sub>	3.5977								
M <sub>e</sub> -M <sub>r</sub>	0.7763	}	8	4.374	0.790	3.593	0.980	0.781	17.85%
M <sub>e</sub> -M <sub>r</sub> /M <sub>e</sub> %	17.748%		9	4.374	0.790	3.602	0.945	0.772	17.65%
<b>Courtesy</b>			10	4.272	0.862	3.460	1.012	0.812	19.00%
<b>Credibility</b>			11	4.386	0.822	3.578	1.020	0.808	18.43%
<b>Security</b>									
M <sub>e</sub>	4.3638	}	12	4.346	0.835	3.694	0.963	0.651	14.99%
M <sub>r</sub>	3.7808		13	4.431	0.761	3.784	0.973	0.647	14.61%
M <sub>e</sub> -M <sub>r</sub>	0.5831		14	4.248	0.869	3.852	1.006	0.396	9.32%
M <sub>e</sub> -M <sub>r</sub> /M <sub>e</sub> %	13.361%		15	4.431	0.761	3.793	1.085	0.638	14.39%
<b>Access</b>									
M <sub>e</sub>	3.4228	}	16	4.224	0.793	3.457	1.140	0.767	18.15%
M <sub>r</sub>	2.8880		17	4.207	0.861	3.856	0.981	0.352	8.36%
M <sub>e</sub> -M <sub>r</sub>	0.5348		18	4.211	0.881	3.704	0.996	0.507	12.04%
M <sub>e</sub> -M <sub>r</sub> /M <sub>e</sub> %	15.625%		19	4.472	0.779	3.423	1.200	1.049	23.46%
<b>Communication</b>									
M <sub>e</sub>	4.2541								
M <sub>r</sub>	3.4244								
M <sub>e</sub> -M <sub>r</sub>	0.8297	}	20	4.264	0.841	3.464	1.036	0.800	18.77%
M <sub>e</sub> -M <sub>r</sub> /M <sub>e</sub> %	19.503%		21	4.244	0.877	3.385	1.089	0.859	20.24%
<b>UnderStanding the Customer</b>									
M <sub>e</sub>	4.09959								
M <sub>r</sub>	3.37629								
M <sub>e</sub> -M <sub>r</sub>	0.72330	}	22	4.138	0.922	3.412	1.079	0.726	17.54%
M <sub>e</sub> -M <sub>r</sub> /M <sub>e</sub> %	17.643%		23	4.061	1.004	3.340	1.073	0.721	17.75%
<b>Tangibles</b>									
M <sub>e</sub>	4.2304	}							
M <sub>r</sub>	3.7045		24	3.976	1.036	3.519	1.043	0.457	11.49%
M <sub>e</sub> -M <sub>r</sub>	0.5259		25	4.366	0.844	3.619	1.113	0.747	17.12%
M <sub>e</sub> -M <sub>r</sub> /M <sub>e</sub> %	12.431%		26	4.350	0.816	3.790	1.065	0.559	12.86%
<b>Total</b>				<b>4.317</b>	<b>0.722</b>	<b>3.566</b>	<b>1.118</b>	<b>0.751</b>	<b>17.39%</b>

Source: Service quality scores sheet for domestic customers (Appendix 11)

# Appendix 13 DATA ANALYSIS : Service Quality Score Sheet (Small commercial Customers)

Dimension (Generic)	Dimension (Expanded)	All Attributes	Durations of Customers & frequency of each duration			Customers' measure of Expected service									Customers Measure of Received Service								
						Scores and Frequency of scores (Fe)					Means(M <sub>e</sub> ); Variance(V <sub>e</sub> ); Standard deviation (S <sub>e</sub> ); Coeff. of variation (C <sub>e</sub> )				Scores and Frequency of scores (Fr)					Means(M <sub>r</sub> ); Variance (V <sub>r</sub> ); Standard deviation (S <sub>e</sub> ) Coeff. of variation (C <sub>e</sub> )			
			<2yrs	>2 yrs & <5yrs	>5yrs	Scores					Variables				Scores					Variables			
						5	4	3	2	1	M <sub>e</sub>	V <sub>e</sub>	S <sub>e</sub>	C <sub>e</sub>	5	4	3	2	1	M <sub>r</sub>	V <sub>r</sub>	S <sub>r</sub>	C <sub>r</sub>
Reliability	Reliab.	1-5	11	6	28	30	11	4	0	0	4.58	0.42	0.65	14.2%	15	14	14	0	2	3.89	1.03	1.02	26.1%
			32	9	2	1	1	4.56	0.74	0.86	18.8%	7	15	14	7	2	3.40	1.13	1.06	31.2%			
			28	12	4	0	1	4.47	0.69	0.83	18.6%	11	14	14	3	3	3.60	1.26	1.12	31.2%			
			32	11	2	0	0	4.67	0.31	0.56	12.0%	8	12	6	1	1	3.89	0.95	0.98	25.1%			
			31	14	0	0	0	4.69	0.21	0.46	9.9%	13	17	13	0	2	3.87	0.96	0.98	25.3%			
Responsiveness	Respon.	6-7	28	16	1	0	0	4.60	0.28	0.53	11.6%	8	17	17	1	2	3.62	0.90	0.95	26.2%			
			25	16	3	0	1	4.42	0.64	0.80	18.1%	5	19	17	2	2	3.51	0.83	0.91	25.9%			
Assurance	Compet.	8-9	24	17	3	1	0	4.42	0.51	0.71	16.2%	12	16	11	5	1	3.73	1.08	1.04	27.9%			
			30	13	2	0	0	4.62	0.32	0.57	12.3%	12	18	11	3	1	3.82	0.95	0.97	25.4%			
	Courtesy CRE	10-11	23	17	5	0	0	4.40	0.46	0.68	15.5%	10	20	11	3	1	3.78	0.88	0.94	24.9%			
			31	11	2	1	0	4.60	0.46	0.68	14.8%	8	20	11	3	1	3.72	0.85	0.92	24.8%			
			33	11	1	0	0	4.71	0.25	0.50	10.6%	14	16	10	4	1	3.84	1.06	1.03	26.8%			
	Security	12-14	30	12	3	0	0	4.60	0.37	0.61	13.3%	13	19	11	1	1	3.93	0.82	0.90	23.0%			
			20	19	5	0	1	4.27	0.68	0.83	19.4%	15	20	8	1	1	4.04	0.80	0.89	22.1%			
Empathy	Access	16-19	29	14	2	0	0	4.60	0.33	0.57	12.5%	14	16	10	3	1	3.89	1.01	1.00	25.9%			
			29	10	5	1	0	4.49	0.61	0.78	17.3%	9	17	14	2	3	3.60	1.13	1.06	29.5%			
			23	13	7	1	1	4.24	0.90	0.95	22.3%	11	22	10	0	2	3.89	0.85	0.92	23.8%			
			21	17	4	3	0	4.24	0.76	0.87	20.6%	11	21	10	1	2	3.84	0.93	0.97	25.1%			
	Commun.	20-22	29	14	2	0	0	4.60	0.33	0.57	12.5%	13	11	11	7	3	3.53	1.54	1.24	35.1%			
			22	15	7	1	0	4.29	0.65	0.81	18.8%	10	14	15	5	1	3.60	1.04	1.02	28.3%			
			17	25	2	1	0	4.29	0.43	0.65	15.2%	13	13	17	2	0	3.82	0.81	0.90	23.6%			
			18	22	4	1	0	4.27	0.51	0.71	16.7%	9	15	15	5	1	3.58	1.00	1.00	27.9%			
Und.Cus.	23-24	16	20	8	1	0	4.13	0.60	0.78	18.8%	10	14	13	6	2	3.53	1.23	1.11	31.3%				
		14	24	4	3	0	4.09	0.66	0.81	19.8%	6	12	19	6	2	3.31	1.01	1.01	30.4%				
Tangibles	Tangibl.	25-27	12	20	10	2	1	3.89	0.85	0.92	23.8%	8	17	15	4	1	3.60	0.91	0.95	26.4%			
			26	13	5	1	0	4.42	0.60	0.77	17.5%	13	19	8	4	1	3.87	1.00	1.00	25.9%			
			26	12	6	1	0	4.40	0.64	0.80	18.2%	17	15	12	0	1	4.04	0.84	0.92	22.7%			
<b>Total</b>						<b>679</b>	<b>408</b>	<b>103</b>	<b>19</b>	<b>6</b>	<b>4.43</b>	<b>0.57</b>	<b>0.75</b>	<b>17.0%</b>	<b>295</b>	<b>443</b>	<b>337</b>	<b>79</b>	<b>41</b>	<b>3.73</b>	<b>1.03</b>	<b>1.01</b>	<b>27.2%</b>

Source: Research Data

Appendix 14

DATA ANALYSIS : Service Quality Variables

(Small commercial Customers)

Dimension (Expanded)	All Attributes		$M_e$	$V_e$	$M_r$	$V_r$	$M_e - M_r$	$M_e - M_r / M_e\%$
<b>Reliability</b>								
$M_e$	4.5667	1	4.578	0.649	3.889	1.016	0.689	15.05%
$M_r$	3.6954	2	4.556	0.858	3.400	1.062	1.156	25.37%
$M_e - M_r$	0.8712	3	4.467	0.833	3.600	1.123	0.867	19.40%
$M_e - M_r / M_e\%$	19.078%	4	4.667	0.558	3.893	0.976	0.774	16.58%
<b>Responsiveness</b>								
$M_e$	4.5704	5	4.689	0.463	3.867	0.980	0.822	17.54%
$M_r$	3.6667	6	4.600	0.533	3.622	0.950	0.978	21.26%
$M_e - M_r$	0.9037	7	4.422	0.802	3.511	0.910	0.911	20.60%
$M_e - M_r / M_e\%$	19.773%							
<b>Competence</b>								
$M_e$	4.5222							
$M_r$	3.7778							
$M_e - M_r$	0.7444	8	4.422	0.715	3.733	1.041	0.689	15.58%
$M_e - M_r / M_e\%$	16.462%	9	4.622	0.569	3.822	0.973	0.800	17.31%
<b>Courtesy</b>								
		10	4.400	0.680	3.778	0.940	0.622	14.14%
<b>Credibility</b>								
		11	4.600	0.680	3.721	0.923	0.879	19.11%
<b>Security</b>								
$M_e$	4.5444	12	4.711	0.500	3.844	1.032	0.867	18.40%
$M_r$	3.9271	13	4.600	0.611	3.933	0.904	0.667	14.49%
$M_e - M_r$	0.6173	14	4.267	0.827	4.044	0.893	0.222	5.21%
$M_e - M_r / M_e\%$	13.584%	15	4.600	0.573	3.886	1.005	0.714	15.51%
<b>Access</b>								
$M_e$	3.5156	16	4.489	0.778	3.600	1.062	0.889	19.80%
$M_r$	2.9733	17	4.244	0.946	3.889	0.924	0.356	8.38%
$M_e - M_r$	0.5422	18	4.244	0.873	3.844	0.965	0.400	9.42%
$M_e - M_r / M_e\%$	15.424%	19	4.600	0.573	3.533	1.240	1.067	23.19%
<b>Communication</b>								
$M_e$	4.2778							
$M_r$	3.7000							
$M_e - M_r$	0.5778	20	4.289	0.654	3.822	0.902	0.467	10.88%
$M_e - M_r / M_e\%$	13.506%	21	4.267	0.712	3.578	1.000	0.689	16.15%
<b>UnderStanding the Customer</b>								
$M_e$	4.1111							
$M_r$	3.4222							
$M_e - M_r$	0.6889	22	4.133	0.777	3.533	1.108	0.600	14.52%
$M_e - M_r / M_e\%$	16.757%	23	4.089	0.812	3.311	1.007	0.778	19.02%
<b>Tangibles</b>								
$M_e$	4.2370							
$M_r$	3.9556	24	3.889	0.924	3.600	0.952	0.289	7.43%
$M_e - M_r$	0.2815	25	4.422	0.774	3.867	1.002	0.556	12.56%
$M_e - M_r / M_e\%$	6.643%	26	4.400	0.800	4.044	0.918	0.356	8.08%
<b>Total</b>			<b>4.428</b>	<b>0.567</b>	<b>3.730</b>	<b>1.029</b>	<b>0.698</b>	<b>15.77%</b>

Source: Service quality scores sheet for Small commercial customers (Appendix 13)

Appendix 15

DATA ANALYSIS : Service Quality Score Sheet (Large commercial Customers)

Dimension Generic	Dimension Expanded	All Attributes	Durations of Customers & frequency of each duration			Customers' measure of Expected service									Customers Measure of Received Service								
						Scores of Frequency of scores (Fe)					Means(M <sub>e</sub> ); Variance(V <sub>e</sub> ); Standard deviation (Se) Coeff. of variation (C <sub>e</sub> )				Frequency of scores (F <sub>r</sub> )				Means(M <sub>r</sub> ); Variance (V <sub>r</sub> ); Standard deviation (Se <sub>r</sub> ); Coeff. of variation (C <sub>e</sub> )				
			<2yrs	>2 yrs	>5yrs	Scores					Variables				Scores				Variables				
						5	4	3	2	1	M <sub>e</sub>	V <sub>e</sub>	S <sub>e</sub>	C <sub>e</sub>	5	4	3	2	1	M <sub>r</sub>	V <sub>r</sub>	S <sub>r</sub>	C <sub>r</sub>
Reliability	Reliab.	1 2 3 4 5	1	0	14	13	1	1	0	0	4.80	0.29	0.54	11.3%	3	7	4	0	1	3.73	1.00	1.00	26.7%
						9	3	3	0	0	4.40	0.64	0.80	18.2%	3	4	5	0	3	3.27	1.80	1.34	41.0%
						9	4	1	1	0	4.40	0.77	0.88	20.0%	3	3	6	2	1	3.33	1.29	1.14	34.1%
						11	4	0	0	0	4.73	0.20	0.44	9.3%	8	5	1	1	0	4.33	0.76	0.87	20.1%
						8	6	1	0	0	4.47	0.38	0.62	13.8%	4	4	5	1	1	3.60	1.31	1.14	31.8%
Responsiv- -eness	Respon.	6 7				11	2	2	0	0	4.60	0.51	0.71	15.5%	4	3	6	1	1	3.53	1.32	1.15	32.5%
						9	4	1	1	0	4.40	0.77	0.88	20.0%	3	2	8	1	1	3.33	1.16	1.07	32.2%
Assurance	Compet.	8 9				7	5	2	1	0	4.20	0.83	0.91	21.6%	4	4	6	0	1	3.67	1.16	1.07	29.3%
						7	6	1	1	0	4.27	0.73	0.85	20.0%	4	6	5	0	0	3.93	0.60	0.77	19.6%
	Courtesy Credibility	10 11				7	6	1	0	1	4.20	1.09	1.05	24.9%	2	6	7	0	0	3.67	0.49	0.70	19.1%
						10	4	0	1	0	4.53	0.65	0.81	17.8%	5	6	4	0	0	4.07	0.60	0.77	19.0%
	Security	12 13 14				12	1	1	0	1	4.53	1.18	1.09	24.0%	6	4	3	1	1	3.87	1.45	1.20	31.1%
						9	4	2	0	0	4.47	0.52	0.72	16.1%	5	7	2	1	0	4.07	0.73	0.85	21.0%
						7	4	3	1	0	4.13	0.92	0.96	23.1%	7	5	3	0	0	4.27	0.60	0.77	18.1%
			9	3	3	0	0	4.40	0.64	0.80	18.2%	9	4	2	0	0	4.47	0.52	0.72	16.1%			
Empathy	Access	16 17 18				8	4	2	0	1	4.20	1.23	1.11	26.4%	4	3	5	1	2	3.40	1.71	1.31	38.4%
						7	5	2	1	0	4.20	0.83	0.91	21.6%	5	6	3	1	0	4.00	0.80	0.89	22.4%
						6	4	4	1	0	4.00	0.93	0.97	24.2%	6	5	2	1	1	3.93	1.40	1.18	30.0%
	Communic. Und.Cus.	19 20 21 22				13	0	1	0	1	4.60	1.17	1.08	23.5%	3	4	3	3	2	3.20	1.76	1.33	41.5%
						7	4	3	0	1	4.07	1.26	1.12	27.6%	3	3	7	1	1	3.40	1.17	1.08	31.9%
						4	7	3	0	1	3.87	1.05	1.02	26.5%	3	5	7	0	0	3.73	0.60	0.77	20.7%
						5	6	3	0	1	3.93	1.13	1.06	27.0%	3	2	5	3	2	3.07	1.66	1.29	42.0%
			6	5	2	1	1	3.93	1.40	1.18	30.0%	3	3	6	2	1	3.33	1.29	1.14	34.1%			
			6	6	2	0	1	4.07	1.13	1.06	26.1%	2	2	6	3	2	2.93	1.40	1.18	40.3%			
Tangibles	Tangibles	25 26 27				5	5	4	1	0	3.93	0.86	0.93	23.6%	4	5	5	0	1	3.73	1.13	1.06	28.5%
						9	4	1	0	1	4.33	1.16	1.07	24.8%	7	3	4	0	1	4.00	1.33	1.15	28.9%
						9	5	1	0	0	4.53	0.38	0.62	13.6%	10	2	2	1	0	4.40	0.91	0.95	21.6%
Total					223	112	50	10	10	4.30	0.90	0.95	22.1%	123	113	122	24	23	3.71	1.27	1.13	30.4%	

Source: Research Data

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Dimension (Expanded)		All Attributes							
				$M_e$	$V_e$	$M_r$	$V_r$	$M_e - M_r$	$M_e - M_r / M_e \%$
<b>Reliability</b>									
$M_e$	4.5833	}	1	4.800	0.542	3.733	0.998	1.067	22.22%
$M_r$	3.6667		2	4.400	0.800	3.267	1.340	1.133	25.76%
$M_e - M_r$	0.9167		3	4.400	0.879	3.333	1.135	1.067	24.24%
$M_e - M_r / M_e \%$	20.000%		4	4.733	0.442	4.333	0.869	0.400	8.45%
<b>Responsiveness</b>									
$M_e$	4.4889	}	5	4.467	0.618	3.600	1.143	0.867	19.40%
$M_r$	3.4889		6	4.600	0.712	3.533	1.147	1.067	23.19%
$M_e - M_r$	1.0000		7	4.400	0.879	3.333	1.075	1.067	24.24%
$M_e - M_r / M_e \%$	22.277%								
<b>Competence</b>									
$M_e$	4.2333	}							
$M_r$	3.8000								
$M_e - M_r$	0.4333		8	4.200	0.909	3.667	1.075	0.533	12.70%
$M_e - M_r / M_e \%$	10.236%		9	4.267	0.854	3.933	0.772	0.333	7.81%
<b>Courtesy</b>									
			10	4.200	1.046	3.667	0.699	0.533	12.70%
<b>Credibility</b>									
			11	4.533	0.806	4.067	0.772	0.467	10.29%
<b>Security</b>									
$M_e$	4.3833	}	12	4.533	1.087	3.867	1.204	0.667	14.71%
$M_r$	4.1667		13	4.467	0.718	4.067	0.854	0.400	8.96%
$M_e - M_r$	0.2167		14	4.133	0.957	4.267	0.772	-0.133	-3.23%
$M_e - M_r / M_e \%$	4.943%		15	4.400	0.800	4.467	0.718	-0.067	-1.52%
<b>Access</b>									
$M_e$	3.4000	}	16	4.200	1.108	3.400	1.306	0.800	19.05%
$M_r$	2.9067		17	4.200	0.909	4.000	0.894	0.200	4.76%
$M_e - M_r$	0.4933		18	4.000	0.966	3.933	1.181	0.067	1.67%
$M_e - M_r / M_e \%$	14.510%		19	4.600	1.083	3.200	1.327	1.400	30.43%
<b>Communication</b>									
$M_e$	3.9000	}							
$M_r$	3.4000								
$M_e - M_r$	0.5000		20	3.867	1.024	3.733	0.772	0.133	3.45%
$M_e - M_r / M_e \%$	12.821%		21	3.933	1.062	3.067	1.289	0.867	22.03%
<b>UnderStanding the Customer</b>									
$M_e$	4.0000	}							
$M_r$	3.1333								
$M_e - M_r$	0.86667		22	3.933	1.181	3.333	1.135	0.600	15.25%
$M_e - M_r / M_e \%$	21.667%		23	4.067	1.062	2.933	1.181	1.133	27.87%
<b>Tangibles</b>									
$M_e$	4.2667	}							
$M_r$	4.2000		24	3.933	0.929	3.733	1.062	0.200	5.08%
$M_e - M_r$	0.0667		25	4.333	1.075	4.000	1.155	0.333	7.69%
$M_e - M_r / M_e \%$	1.562%		26	4.533	0.618	4.400	0.952	0.133	2.94%
<b>Total</b>				<b>4.304</b>	<b>0.903</b>	<b>3.714</b>	<b>1.271</b>	<b>0.590</b>	<b>13.71%</b>

Source: Service quality scores sheet for Large commercial customer (Appendix 15)