

**ASSESSING CUSTOMER SATISFACTION ON ELECTRICITY
CONVENTIONAL BILLING SYSTEM IN TANZANIA THE CASE OF
TANESCO ILALA REGION**

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE AWARD OF DEGREE OF MASTER OF
BUSINESS ADMINISTRATION (MARKETING) OF THE OPEN
UNIVERSITY OF TANZANIA**

2015

CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance by the Open University of Tanzania a dissertation titled: *“Assessing Customer Satisfaction on Electricity Conventional Billing System in Tanzania The Case of TANESCO Ilala Region”* in partial fulfilment of the requirements for the degree of Master of Business Administration (Marketing) of the Open University of Tanzania.

Dr. Salum Mohamed

(Supervisor)

Date

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DECLARATION

I, **Ludia Stanley Kiangi**, hereby declare that this dissertation is my own original work and that it has not been presented and will not be presented to any other University for a similar or any other degree award.

Signature

Date

DEDICATION

This work is dedicated to my late parents Edna Mseli and Stanley Kiangi. I also dedicate it to my son Abraham Mohamed Amanzy.

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I would like to thank GOD our almighty for enabling me performing my research which is very important part of my course. I acknowledge the efforts made by my friend Mpoly Sayi for her tireless encouragement and reading my work.

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ABSTRACT

This study was about assessing customer satisfaction on electricity conventional billing system in Tanzania the case of TANESCO Ilala region. The study used questionnaire to gather data from 242 respondents whose responses were descriptively analysed with the aid of SPSS. The study found that there were two types of paying electricity bills. Further, the study found that TANESCO workers were the ones who read electric meter. It was also found that in some cases electric meters were not read accurately although most customers were satisfied with meter reading results. Moreover, the study found that most customers were not lower users of electricity. It was also learnt that the services offered by TANESCO were not satisfactory to most customers despite the fact that they paid their bills accordingly. Furthermore, it was found that long distance travel to electric pay stations customers spending a lot of time in paying electric bills were the main challenges of conventional billing system. The study recommends that TANESCO should withdraw from using electricity conventional billing system so that to invest more on prepaid system. In order to maintain accuracy of electric meter reading, both parts TANESCO and customers have to be involved. Moreover, the price of electricity should be reduced especially for domestic users in order to discourage them from using other sources of electricity which are not only harmful to their health but also to national economy.

Keywords: Customer satisfaction, Electricity, conventional billing system

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LIST OF ABBREVIATIONS

ATM	Automatic Teller Machine
EU	European Union
OUT	Open University of Tanzania
PUC	Public Utility Commission
SERVQUAL	Service Quality Theory
SPSS	Software Package for Social Sciences
TANESCO	Tanzania Electric Supply Company Ltd

CHAPTER ONE

INTRODUCTION

1.1 Background to the Problem

Traditionally the electricity industry in the world has been a publicly owned institution but starting in the 1970s nations began the process of deregulation and privatisation leading to electricity market. A major focus of privatisation was the elimination of the former so called natural monopoly of generation, transmission, and distribution. As a consequence, electricity has become more of a commodity. The separation has also led to the development of new terminology to describe the business units (www.need.org).

Tanzania Electricity Supply Company Limited (TANESCO) is a Tanzania parastatal organization established in 1964. It is wholly owned by the government of Tanzania. The Ministry of Energy and Minerals regulates the operations of TANESCO. Its business include: electricity generation, transmission, distribution and sale of electricity to the Tanzanian mainland and bulk power supply to the island of Zanzibar (www.tanESCO.co.tz).

Electricity is a commodity capable of being bought, sold and traded. An electricity market is a system for effecting purchases, through bids to buy; sales, through offers to sell; and short term trades, generally in the form of financial or obligation swaps (www.need.org). In case of TANESCO, electricity is generated by TANESCO and sold directly to customers.

Measuring and optimizing customer satisfaction is clearly very important in building and maintaining long-term relationships with customers (van Birgelen et al, 2006). Satisfaction is a subject and concept which is difficult to determine (European Institute of Public Administration, 2008). It depends on a myriad of factors and varies from person to person as well as product to product. Some of the main concepts of satisfaction in the literature are value, quality and satisfaction. Value according to Zeithaml (1988) is the importance attached to services based on their usage and the amount paid in exchange. Customers want the best value of their money. They spare no efforts in searching for high quality services (Strategic Direction, 2007). Customer perceptions are determined by myriad of factors including price and quality of the service offered.

A big number of domestic customers in Ilala Region are not paying their bills promptly and the number is increasing as time goes (TANESCO, 2011). However, to what extent do domestic customers have been satisfied with the electric billing systems offered by TANESCO, was the main issue which this study sought to uncover.

1.2 Statement of the Research Problem

Numerous studies show that customer satisfaction is related to repurchase intentions and attitudinal loyalty (Cronin & Taylor, 1992; Mägi & Julander 1996). J. D. Power and Associates (2008) measure overall customer satisfaction of electric utilities through six factors: power quality and reliability, customer service, company image, billing and payment, price, and communications. Rekettye and Pinter (2000) are of the view that customers who are satisfied by electric services have higher price

acceptance. Mwingizi (2008) asserts that online prepayment system established by TANESCO must be communicated exhaustively to customers prior to its launching, and the system must be simple to use. Sindaguru (2009) says that the factors influencing customer perceptions of TANESCO services are not uniform in terms of significance and magnitude.

In Tanzania, experience shows that electricity prices rise annually. On the other side the media have been reporting a lot of challenges including billing system that face TANESCO. Taking into account the importance of TANESCO to socio-economic development, this study seeks to assess the customer satisfaction on electric billing charged by TANESCO.

1.3 Objectives of the Study

This study has two objectives; general and specific objectives.

1.3.1 General objective of the study

The general objective of this study was to assess customer satisfaction on electricity conventional billing system in Tanzania.

1.3.2 Specific objectives of the study

This study has four specific objectives as follows:

- (i) To identify the modality of paying electricity bills
- (ii) To determine the extent to which domestic customers are satisfied with electric meter reading

- (iii) To identify electricity unit price paid by customers
- (iv) To examine the challenges facing customers using conventional electric meters on billing system.

1.4 Research Questions

This study had two main research questions as follow:

1.4.1 General Research Question

To what extent domestic customers are satisfied with electric billing system and their willingness to settle their bills?

1.4.2 Specific Research Questions

- (i) What are the modalities of paying electricity bills?
- (ii) To what extent are you satisfied with electric meter reading?
- (iii) What is the price of electricity unit?
- (iv) What are the challenges facing customers using conventional electric meters on billing system?

1.5 Significance of the Study

The findings of the study are useful for decision makers in establishing the best ways of electricity bill paying. It can also be used by TANESCO as reference point for setting electricity price per unity.

The study can also be used by researchers in identifying the gaps which warrant for research investigation. Moreover, it can be used as an important reference material to other academicians who will use this research document for further reference.

The study is important to me as it is one of the fulfilment conditions for completing my Master degree in Business Administration (Marketing). The study also contributes to availability of literature on issues related to customer satisfaction on electricity bill system.

1.6 Scope of the Study

The study was strictly focussing on assessing customer satisfaction on electricity conventional billing system in Tanzania, the case of Ilala region as recognised by TANESCO. It sought information from domestic customers who use electricity conventional meter billing system in Gongo la Mboto, Tabata and Vingunguti industrial area in Dar es Salaam.

1.7 Organisation of the Study

The study is organised into five chapters. Chapter one deals with background and statement of the problem that also highlights objectives of the study, research questions, significance of the study, scope of the study and organisation of the study. Chapter two presents literature review in which theoretical and empirical studies are reviewed as well as revealing research gap and conceptual framework of the study.

Chapter three is about research methodology of the study. It explains the research paradigm concept, the study area, sampling design and procedures. It further presents the data collection methods and instruments, data analysis methods as well as the reliability and validity. Chapter four concentrates on presentations of findings, analysis and discussions. It presents the findings of the study. It also analyses and

discusses the findings of the study. Chapter five concludes the study. It presents the summary of the study. It also concludes and offers recommendations and areas for further studies.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter deals with literature review. It presents definitions of key terms, theory of the study and empirical literature. It also presents research gap and conceptual framework of the study as well as synthesis of the study.

2.2 Definitions of Key Terms

This part defines the key concepts used in the study. These terms are satisfaction and customer satisfaction.

2.2.1 Satisfaction

Satisfaction is a feeling which results from process of evaluating what was received against what expected the purchase decision itself and/or the fulfilment of needs and want (FeclikovaA, 2004). This study used the same meaning.

2.2.2 Customer satisfaction

Customer satisfaction is a customer's overall evaluation of the date that has positive influences on retaining customers among different variety of services and products (Gustafson et al, 2005). This study used the same meaning.

2.2.3 Billing System

This is a process of generating invoice to recover sales price from the customers. In conventional meter, the billing is firstly done manually by an individual who read the meter and record the current meter reading, then he takes the current reading to the

office where it is entered into the computer which processes the invoice for the customer who finally pay the bill at specified station.

2.3 Theoretical Literature Review

This part presents the theoretical perspectives. It is specifically focusing on customer's satisfaction theories. These theories were used by this study because they consist of important elements that are very important for understanding this study.

2.3.1 Disconfirmation Theory

Customer satisfaction has been traditionally studied in marketing area as one of the critical attitudinal variables that may influence customer behaviour. Most of the studies of satisfaction in marketing literature are based on the disconfirmation theory. It postulates that, the feeling of satisfaction is a result of the comparison between perceptions of a product's performance and expectations, Oliver and Swan (1989). This theory, representing psychological evaluation processes, provides an understanding of expectations, desires, experiences, and performances that may affect customer attitudes. Based on this theory, Mckinney et al.'s (2002) study suggested that the difference between expectations and actual performance on system quality and information quality is likely to determine web customer satisfaction. Similarly, Khalifa and Liu (2002) posed that confirmation/disconfirmation of pre-adoption expectations and desires, upon adoption, could influence overall customer satisfaction. While the disconfirmation theory has been supported by many researchers, it is hard to operationalize the theory consistently for all product categories (1982).

2.3.2 Service Quality Theory (SERVQUAL)

The theory has been used by various researchers/scholars to investigate the quality of the services offered by an institution that aim at improving socio-economic of its stakeholders. White and Toombs (1998) define quality as the extent to which processes, products, services, and relationships are free from defects, constraints, and items which do not add value for the customer. Using Pryor's definition of quality, Harry and Schroeder (2000) assert that small businesses can implement a variety of quality initiatives. Parasuraman *et al* (1985) identify ten determinants for measuring service quality which are tangibility, reliability, responsiveness, communication, access, competence, courtesy, credibility, security, and understanding/knowledge of customers. In 1988 Parasuraman (1985) purified these ten dimensions and developed them into five dimensions i.e. tangibility, reliability, responsiveness, assurance and empathy to measure service quality or customer satisfaction services.

2.3.3 Dissonance Theory

The dissonance theory suggests that a person who expected a high-value product and received a low-value product would recognize the disparity and experience a cognitive dissonance (Cardozzo, 1965). That is, the disconfirmed expectations create a state of dissonance or a psychological discomfort (Yi, 1990). According to this theory, the existence of dissonance produces pressures for its reduction, which could be achieved by adjusting the perceived disparity. This theory holds that "post exposure ratings are primarily a function of the expectation level because the task of recognizing disconfirmation is believed to be psychologically uncomfortable. The researchers pursued this approach implicitly assume that consumers would generally

find that product performance deviated in some respect from their expectations or effort expenditures and that some cognitive repositioning would be required (Oliver, 1980).

2.3.4 Contrast Theory

According to this theory of contrast, when actual product performance falls short of consumer's expectations about the product, the contrast between the expectation and outcome will cause the consumer to exaggerate the disparity (Yi, 1990). The Contrast theory maintains that a customer who receives a product less valuable than expected, will magnify the difference between the products received and the product expected (Cardozzo, 1965). This theory predicts that product performance below expectations will be rated poorer than it is in reality (Oliver & DeSarbo, 1988). In other words, the Contrast theory would assume that outcomes deviating from expectations will cause the subject to favourably or unfavourably react to the disconfirmation experience in that a negative disconfirmation is believed to result in a poor product evaluation, whereas positive disconfirmation should cause the product to be highly appraised (Oliver, 1977).

2.3.5 The Value Percept Theory

Value-percept disparity theory criticises the predictive expectations used as a comparison standard in the traditional disconfirmation paradigm. Westbrook and Reilly (1983) argue that what is expected from a product may or may not correspond to what is desired or valued in a product. Conversely, that which is valued may or may not correspond to what is expected. Thus, values have been proposed to be a better comparative standard as opposed to expectations in explaining customer

satisfaction/dissatisfaction. According to the value-percept theory, satisfaction is an emotional response that is triggered by a cognitive evaluative process in which the perceptions of an offer are compared to one's values, needs, wants or desires.

2.4 Empirical Literature Review

This part presents empirical studies of other scholars on matters related to customer satisfaction. The studies which have been identified for scrutiny are categorised into three main groups as follow:

2.4.1 Empirical Literature Review Worldwide

Rekettye and Pintér (2000) conducted a study on customer satisfaction and price acceptance in the case of electricity supply aiming at exploring the relationship between satisfaction and price acceptance in the case of a basic utility. The research was used a face-to-face questionnaire survey of a representative sample of randomly selected 1384 residential consumers in Hungary. The findings found that satisfied customers have higher price acceptance. While Rekettye and Pinter's study (ibid) was about customer satisfaction and price acceptance, this study is about assessing customer satisfaction on electricity conventional billing system in Tanzania.

Sijm *et al* (2008) conducted a study on the impact of the EU emissions trading scheme on Electricity Prices. The study uses a variety of methodological approaches, including theoretical, empirical, model, literature and policy analyses. The study shows that a significant part of the costs of freely allocated CO₂ emission allowances is passed through to power prices, resulting in higher electricity prices for consumers and additional ('windfall') profits for power producers. While this study was about

the impact of EU emissions trading scheme on electricity price, the current study is broader as it seeks to assess customer satisfaction on electricity conventional billing system in Tanzania.

Mostaghel (2006) conducted a study on customers' satisfaction: service quality in online purchasing in Iran with the aim of ranking the quality factors perceived to be most important in relation to the uses of online shops. The study used questionnaire as data collection method. The findings show most important web quality factors through Iranian online shoppers' perspectives. This study is opposed to the current study in terms of scope and place. The current study is about assessing customer satisfaction on electricity conventional billing system in Tanzania.

Brunekreeft *et al* (2014) conducted a study on unbundling of electricity transmission system operators in Germany –an experience report with the aim of evaluating the impact of vertical unbundling on German electric utilities. The study used in-depth interviews with sector-experts from the German utilities as method of data collection instrument. The findings reveal that the major step in the unbundling process is from “lean legal unbundling” to “fat legal unbundling”; additional steps beyond that are small, both in benefits and in costs. They also reveal that the benefits of unbundling in terms of increased competition do not come for free: unbundling is costly and it is important to balance cost and benefits in the reform process. This study differs from the current ones as the current study seeks to assess customer satisfaction on electricity conventional billing system in Tanzania.

Casarinand Luciana (2009) conducted a study on prepaid meters in electricity: a cost-Benefit analysis using social cost-benefit analysis to assess the adoption of prepaid

electricity meters within a local community. The analysis highlights how the role of tariffs, the cost of start-up investment and the socio-economic characteristics of the population affect system performance. Simulation exercises are used to examine the sensitivity of results to change in some distinctive elements of policy implementation. Results indicate that prepaid meters lead to an increase in welfare. They also indicate that the advantages of the system are linked to a reduction of arrears in accounts receivable, and operational and financial costs on the part of the service provider, as well as to a better allocation of resources for the consumer. While this study was conducted in Austral on prepaid meters, the current study focuses on assessing customer satisfaction on electricity conventional billing system in Tanzania.

2.4.2 Empirical Literature Review in Africa

Kioko (n.d) examined the effect of prepaid meters on revenue collection, a case of Kenya power, Nakuru, Kenya. The study used a survey research design to establish effects of prepaid meters on revenue collection efficiency. 396 prepaid meters in Nakuru County were targeted. A sample of 201 respondents was selected using Stratified random sampling technique. The study used primary data captured by use of questionnaires. Study findings indicated that perceived risk was negatively correlated to revenue collection while perceived ease of use, perceived low cost and perceived usefulness were positively related and had a significant effect on revenue collection. This study therefore, affirms that perceived risk reduces revenue collection, while perceived ease of use, perceived low cost and perceived usefulness enhance revenue collection. While this study was about prepaid meters, the current study deals with conventional meters.

Teklehaimanot (2007) conducted a study on evaluation of the design and implementation of decentralised billing system project and its impact on change management process with the aim of evaluating the effectiveness of the design and implementation of Ethiopian Electric Power Corporation's billing system. This study identifies that; there were problems in the change management of the case under consideration. It was suggested that to tackle the identified problems and to pursue additional changes management should take corrective action promptly. While this study was undertaken in Ethiopia with the aim of evaluating the design and implementation of billing system, the current study is about assessing customer satisfaction on electricity conventional billing system in Tanzania.

Tushaar and Tewaria (2003) conducted a study on assessment of South African prepaid electricity experiment, lessons learned, and their policy implications for developing countries. This study reviews the economics, logistics, and technology underlying the South African experiment of prepaid electricity. The findings reveal that although this experiment has resulted into benefiting large masses of small and dispersed consumers, it has also generated a set of new problems that could not be visualized at the inception of the experiment. The success of this program can be largely attributed to a number of factors, including a good marketing campaign, innovative tariff schedules, better planning and management, and so on. This study is opposed to the current study as the current study seeks to assess customer satisfaction on electricity conventional billing system in Tanzania.

Babatunde and Shuaibu (n.d) examines the residential demand for electricity in Nigeria as a function of real gross domestic product per capita, and the price of

electricity, the price of substitute and population between 1970 and 2006. The study uses of the bounds testing approach to cointegration within an autoregressive distributed framework. The findings reveal that income, the price of substitute and population emerges as the main determinant of electricity demand in Nigeria, while electricity price is insignificant. The relationship among variables is more stable and significant. The relationship among variables is more stable and significant. While this study is broader, the current study which is specific to assess customer satisfaction on electricity conventional billing system in Tanzania.

Eder and Christopher (2013) conducted a study on diffusion of innovation at the bottom of the pyramid: the impact of a payment system on the adoption of electricity in rural Uganda. The study aimed at finding out how a payment system affects the diffusion of renewable electricity in rural Uganda. The study was a case study. The study found that a set of critical factors like reliability, trust, transparent communication and satisfying the needs of the local people were identified. It was also found that a payment system, tariffs, and investment costs must satisfy specific requirements in order to be effective, efficient, and positively affect the rate of adoption. However, this study is opposed to current study which focuses on assessing customer satisfaction on electricity conventional billing system in Tanzania.

2.4.3 Empirical Literature Review in Tanzania

Mollel (2007) conducted a study on evaluation of services' outsourcing of utilities and services improvement in Tanzania aiming at evaluating the impact of services' outsourcing of utilities and services improvement in power supply and service at Kinondoni South region in Dar es Salaam. The study interviewed 60 TANESCO

staff and 100 customers to avoid biased results. The results from the study show that TANESCO had not improved in power services to customers despite outsourcing some of the services to private agent. It was observed that generation of power was not satisfying the available demand leading to overloading that may cause power fluctuation. The findings also showed that the degree of inaccuracy of customer bills had not yet improved even after the Net Group Solution took over the TANESCO's management. However, this study is mainly concentrating on customer satisfaction on conventional electric billing system.

Idindili (2007) conducted a study on analysis of service marketing strategies used by utility organization in Tanzania with the aim of analysing the service marketing strategies used by utility organizations in Tanzania. A total number of 80 customers and 40 TANESCO employees were drawn from TANESCO offices in Dar es Salaam region. The study found deficiencies in the use of service marketing strategies. While Idindili's study (ibid) was based on marketing strategies used by utility organization, this study is about customer satisfaction on conventional electric billing system.

Sindaguru (2009) conducted a study on the significance of factors influencing customer perception towards services provided by Tanzania Electric Supply Company Ltd with the aim of finding out factors influencing customer perceptions to TANESCO services in Dar es Salaam region. A non-probabilistic convenient sampling technique in sample selection was employed by the study. The study found out that factors influencing customer perceptions of TANESCO services are not uniform in terms of significance and magnitude. However, this study deals with

assessing customer satisfaction on electricity conventional billing system in Tanzania.

Mimbi (2007) conducted a study on factors influencing customer satisfaction with insurance companies with the objective of investigating the factors influencing customer satisfaction with insurance companies. A cross-section of 121 customers of insurance policies from different companies in Tanzania provided data on the way they rated their insurance companies in respect to the features and services they offer. The study found that assurance and reliability dimensions have a significant influence on customer satisfaction with insurance companies. While, Mimbi's study (ibid) was about factors influencing customer satisfaction with insurance companies, this study concentrates on the assessment of customer satisfaction on electricity conventional billing system in Tanzania.

Ringo (2007) conducted a study on debit cards and customer satisfaction with the aim of investigating on debit card usage and customer satisfaction. The study used survey method of data collection. The study found that there was a positive response for customer satisfaction in using of debit cards among the people interviewed. It also found that there were challenges facing customer in using the debit which included frequent break downs of the ATM machine, limited cash withdrawal amount, narrow services offered by the card, few ATMs and time consuming services due to long queues. However, this study is about assessing customer satisfaction on electricity conventional billing system in Tanzania.

Kara (2006) conducted a study on investigation of the factors influencing customer satisfaction in tourist hotels in Tanzania the case of Dar es Salaam with the aim of

investigating the factors influencing customer satisfaction in tourist hotels in Dar es Salaam. Primary data were collected through using structured questionnaires and observation while secondary data were considered as well. The findings revealed that hotel customers were satisfied to a great extent with the services they received in tourist hotels, while the hotel locations in the city centre and the reliability in maintaining daily menu proved to be a less significant factor in influencing customer satisfaction. However, this study is about assessing customer satisfaction on electricity conventional billing system in Tanzania.

Sarota (2009) conducted a study on the effect of electronic payment on customer satisfaction with the objective of examining the effects of electronic payment system on customer satisfaction, with specific reference to CRDB bank. An explanatory research design was employed to address the above objectives collecting data from a sample of 70 respondents through the use of semi-structured questionnaire. The study found strong evidence that there was a negative relationship between time spent in service delivery and customer satisfaction. It was also been found out that there was a significant difference in the level of satisfaction between service processed manually and the one processed electronically in terms of reliability, relevance, accuracy, timeliness, and efficiency. While Sarota's study (ibid) was about the effect of electronic payment on customer satisfaction, this study deals with customer satisfaction on electricity conventional billing system in Tanzania.

Mashaka (2009) conducted a study on the assessment of customer satisfaction on the health service in Tanzania. The study was conducted by a way of survey strategy whereby four councils were involved. The samples were randomly selected and 152

respondents were interviewed by use of questionnaire. The result revealed that there was low satisfaction of customers on the health service offered by these health centres due to lack of interaction, timeliness, outcome and atmosphere. However, this study is about assessing customer satisfaction on electricity conventional billing system in Tanzania.

Mujemula (2009) conducted a study on the role of mobile banking in customer satisfaction. The study used a sample of 50 respondents who were randomly selected. Data were collected through the use of questionnaire instrument and interviews, observation and focus group discussions. The findings indicated that mobile banking facility positively influences customer satisfaction. However, this study dwells on assessing customer satisfaction on electricity conventional billing system in Tanzania.

Sumbwe (2009) conducted a study on social health insurance and customer satisfaction. The findings were analysed through a sample survey of 120 respondents from regional and local government offices, government ministries and departments and executive agencies. The findings revealed high propensity of health services utilisation and that the NHIF was serving satisfactory its intended beneficiaries. There were no differences on perception of the fairness of rate of contribution among different income groups and nonexistence of difference in opinions on benefit package offered based on gender. While Sumbe (ibid) conducted a study on social health insurance and customer satisfaction, this study covers on assessing customer satisfaction on electricity conventional billing system in Tanzania.

Thomas (2006) conducted a study on perceived quality of physical evidence and customer satisfaction. The study developed a survey tool to determine perceived quality levels among a random sample of patients attending clinical departments housed within sampled renovated, and newly built service areas. It included seventy-five questions, in Likert-type questions based on Hospital quality audit reports, and literature review. 114 questionnaires were analysed. The findings revealed that customer satisfaction with service rendered was an independent of quality of physical evidence perceived. Components rated poor and neutral in quality, which elicited dissatisfaction feelings, rated by majority of respondents comprised improvement areas. Some challenges mentioned included shortage of nursing staff, demotivated by workload, long service queues, comparably fewer equipment, and inadequate ward space hindering smooth service delivery. However, this study deals with customer satisfaction on electricity conventional billing system in Tanzania.

Fabian (2008) conducted a study on customer care towards building customer satisfaction. The study was conducted using survey by taking the University of Dar es Salaam as a case study. The findings show that there were significant contributions of customer care on the customer satisfaction. Apart from that, the study revealed that University of Dar es Salaam customers are moderately satisfied. While Fabian's study (ibid) was about customer care towards building customer satisfaction, this study is about assessing customer satisfaction on conventional electric billing system.

David (2007) conducted a study on evaluation of the effects of two loan conditions namely loan size amount and loan repayment period of the SACCOS on customer

satisfaction. Data collection process employed two data collection instruments namely questionnaire and interview. The findings showed that customer satisfaction from SACCOS was not affected by small loan size amount although short loan repayment period affected it. It was however affected by other factors like collateral, education level and skills, and type of business customers dealt with. However, this deals with the assessment of customer satisfaction on conventional electric billing system.

Peter (2008) conducted a study on the influence of selected factors on customer satisfaction in Tanzania with specific reference to Dar es Salaam. A descriptive research design was employed to address the study collecting data from a sample of 65 respondents through the use of semi-structured questionnaire. The study found out that the value of the product characteristics provided to corporate clients is positively related to satisfaction. Besides that, it has been found out that, the better the logistical support provided to corporate clients the higher the perceived customer satisfaction with an exception of the customer care and follow ups provided to clients which seem not be of significance in the satisfaction of the clients. It was further found out that, the more reliable the information offered to corporate clients, the higher the levels of customer satisfaction. While Peter's study (ibid) was about the influence of selected factors on customer satisfaction in Tanzania, this study is about the assessment of customer satisfaction on conventional electric billing system.

Mwingizi (2008) studied on factors influencing customers to adopt prepayment systems in Tanzania with the aim of identifying the main factors that help to influence customers to adopt a prepayment system in Tanzania. Questionnaire

method was used to gather data from 170 TANESCO LUKU customers in Dar es Salaam. The results revealed that ease of use and relative advantage were the two significant factors that would determine acceptance of online prepayment system. The implications of the study results were: the advantages of any online prepayment system must be communicated exhaustively to customers prior to its launching and the system must be simple to use. While Mwingizi's study (2ibid) was about factors influencing customers to adopt prepayment systems in Tanzania, this study concentrates on electricity conventional billing system in Tanzania.

2.5 Research Gap

Several studies conducted were about customer satisfaction on different issues from what this study seeks to address. Some scholars conducted studies about customer satisfaction: Ringo (2007) on debit cards and customer satisfaction; Mimbi (2007) on factors influencing customer satisfaction with insurance companies; Kara (2006) on investigating the factors influencing customer satisfaction in tourist hotels in Tanzania; Sarota (2009) on the effect of electronic payment on customer satisfaction; Mashaka (2009) on the assessment of customer satisfaction on the health service in Tanzania; David (2007) on evaluation of the effects of two loan conditions namely loan size amount and loan repayment period of the SACCOS on customer satisfaction.

Few studies conducted about electricity were also based on different issues from what this study seeks to address. For example, Rekettye and Pintér (2000) on customer satisfaction and price; Mollel (2007) on evaluation of services' outsourcing of utilities and services; Idindili (2007) on analysis of service marketing strategies

used by utility organization; Sindaguru (2009) on the significance of factors influencing customer perception towards services provided by TANESCO; and Mwingizi (2008) on factors influencing customers to adopt prepayment systems in Tanzania.

Looking at those studies conducted by various researchers, there is no study specifically dealing with customer satisfaction on electricity conventional billing system in Tanzania. It is from this ground which propels this study to bridge the gap by assessing customer satisfaction on electricity conventional billing system in Tanzania.

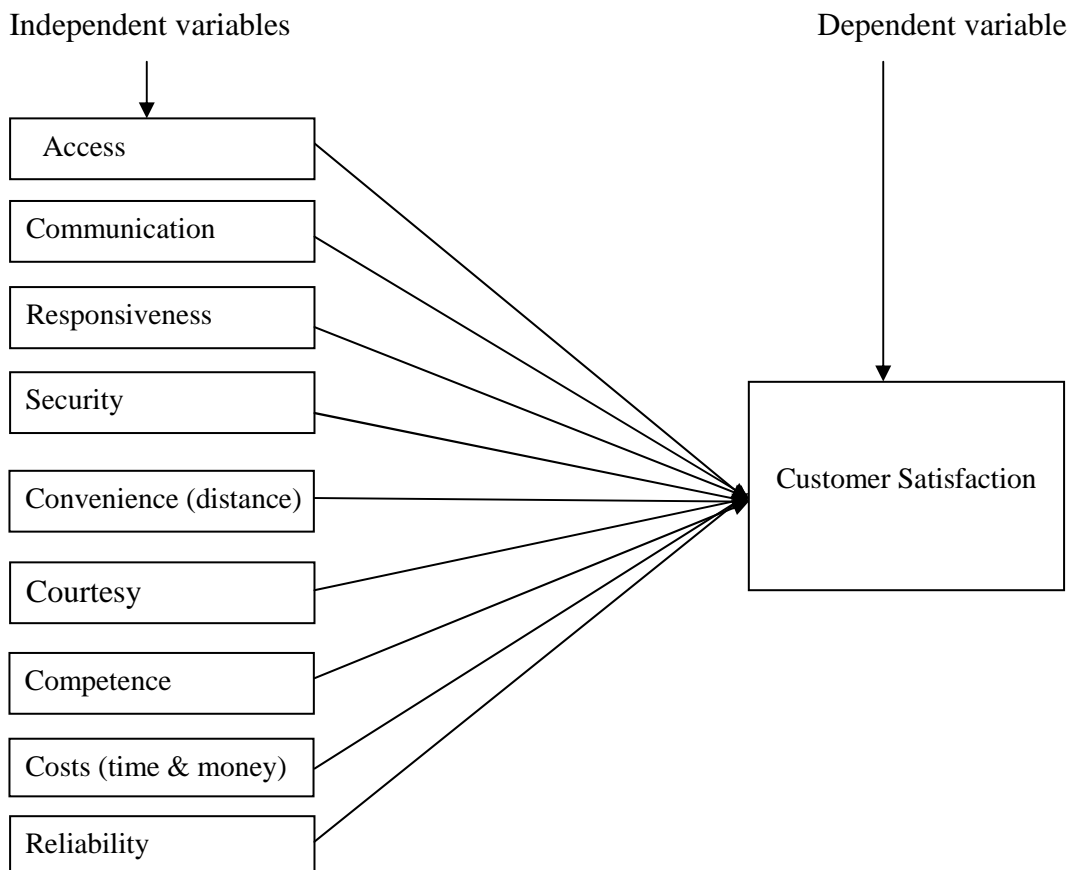


Figure 2.1: Customer Satisfaction Framework

Source: Researcher own construction

2.6 Conceptual Framework of the Study

On the basis of factor analysis, this study has created a framework of customer satisfaction on conventional electric billing system by TANESCO as proposed in Figure 2.1. The figure has independent and dependent variables as it is clearly seen.

2.7 Theoretical Framework

The conceptual framework as formulated by the researcher provides the required information on the customer satisfaction on electricity conventional billing system. The conceptual model consists of independent variables which are access, reliability, costs, competence, courtesy, convenience, security, customers' knowledge, responsiveness and communication. Also the conceptual framework consists of dependent variable which is customer satisfaction.

The arrows in Figure 2.1 depict the connection between access, reliability, costs, competence, courtesy, convenience, security, customers' knowledge, responsiveness and communication, and customer satisfaction on conventional billing system in Tanzania. The independent variables shown in figure 2.1 are the dimensions which can be used to measure customer satisfaction as identified by Parasuraman *et al* (1985).

Parasuraman (1985) critically looked those ten dimensions and purified and developed them into five dimensions i.e. tangibility, reliability, responsiveness, assurance and empathy to measure service quality or customer satisfaction services. In this study it is assumed that effective access, reliability, costs, competence,

courtesy, convenience, security, customers' knowledge, responsiveness and communication leads to customer satisfaction on electricity conventional billing system and vice versa.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter deals with approaches which have been used to conduct this study. The chapter explains the research paradigm and design followed by details of the area of study and sampling methods. A description of the data sources, collection techniques and questionnaire design are also discussed. The validity and reliability of research instrument was also tested.

3.2 Research Paradigm and Design

3.2.1 Research Paradigm

Johnson and Christensen (2010) defines research paradigm as a perspective based on the set of shared assumptions, values, concepts and practices. Thus, paradigm can be defined as a function of how researcher thinks about the development of knowledge. Research paradigm includes the research methods and research philosophies. Research paradigm helps researcher to conduct the study in an effective manner. This study used both positivism and interpretive paradigms/philosophies as it sought to assess customer satisfaction on electricity conventional billing system.

Sunders (2003) asserts that positivism philosophy is based upon the highly structured methodology to enable generalization and quantifiable observations and evaluate the result with the help of statistical methods. In positivism philosophy the researcher plays role of an objective analyst to evaluate the collected data and produces an appropriate result in order to achieve research aims and objectives.

Johnson and Christensen (2010) assert that interpretive philosophy believes that the social world of management and business is too complex as to be formulated in theories and laws such as in the natural science. Interpretive philosophy represents the critical thinking about positivism philosophy. According to this philosophy, there are many truths and meaning of a simple fact and these are suitable for every situation and for every research problem.

3.2.2 Research Design

Research design as conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data (Kothari, 2004). Research design of this study is evaluative. TANESCO has been offering electricity through traditional or electricity conventional meters since its establishment in 1964. Despite the changes which have been taking place all over the world including Tanzania, conventional billing system still persists in most areas. The use of this traditional billing system might have impacts to both TANESCO and customers. This makes this study to evaluate the satisfaction of customers on the said billing system. Thus, this study is evaluative as it aimed at assessing customer satisfaction on electricity conventional billing system in Tanzania.

3.3 Area of the study

The research was conducted in TANESCO's Ilala Region. According to TANESCO, Ilala region had three districts namely, Viwandani (Industrial), Tabata and Gongo la Mboto. All of these areas were involved in collecting data for this study. TANESCO's domestic Customers from those areas were randomly selected. This

area was chosen because it had many customers using conventional (traditional) billing system in Dar es Salaam compared to other areas with the same status. Furthermore, TANESCO customers in Ilala Region were diversity in terms of electricity consumption and tariffs. Thus, this study used TANESCO's domestic customers to collect data on assessing customer satisfaction on electricity conventional billing system from 242 respondents.

3.4 Population of the Study

Population means all the individuals or objects that meet certain requirements for membership in the overall group (Churchill and Brown, 2007). The population of the study comprised of TANESCO customers residing Gongo la Mboto, Viwandani and Tabata. The total number of TANESCO's customers in these areas was estimated to be around is 650 (TANESCO, 2014).

3.5 Sampling Design and Sample Size

3.5.1 Sampling Design

Sarndal *et al* (1992) contend that in the theory of finite population, a sampling design specifies for every possible sample its probability of being drawn. Somekh and Cathy (2005) assert that in probability sampling each member or item of the population has an equal or known chance of being selected. It is usually possible to generalize findings from analysis of data collected from such a sample to the population overall. Random sample is a selection from a population in which each item has an equal chance of being selected and the selection of one does not affect the selection of any other. This study used probability sample in which each customer using electric meter was an equal chance of being selected.

3.5.2 Sample Size

Sample is a group of respondents drawn from the population in such way that the information obtained from the sample can be generalized on a population (Best and Khan, 2006). It could not be possible to engage the entire population, nor was it necessary, and therefore the study identified a portion of the population as a sample. The sample size of this study was 242 respondents of TANESCO Ilala region. The three districts of the region shared equal number of respondents. Thus, Viwandani, and Tabata shared 80 respondents each, who were selected randomly to represent others. Gongo la Mboto shared 82 respondents as the area was bigger than other TANESCO districts (for this case). The criteria used to select this sample were time and financial constraints. The study could not manage to collect data from many respondents as it could be according to the entire population due to time limit and financial limitations as it was individual sponsorship. Thus, the following Table 3.1 summarises a sample size of the study:

Table 3.1: Sample Size of the Study

S/N	Area	No. of Respondents	Sampling Design	Data Collection Tools
1	Gongo la Mboto	82	Random sampling	questionnaire
2	Tabata	80	Random sampling	questionnaire
3	Viwandani	80	Random sampling	questionnaire
Total		242		

Source: Compiled from Field Data

3.6 Data Sources

This study used questionnaire to collect primary data from TANESCO customers who were using electric meters as a measurement of paying their bills. This study used both primary and secondary data.

3.6.1 Primary Data Collection

Primary data was obtained through questionnaires. TANESCO customers who were using electric meters were given questionnaire to fill in for the purpose of providing information on the electricity conventional billing system in Tanzania.

3.6.2 Secondary Data

Most organizations collect and store a variety of data to support their operations. Secondary data was collected from published and non-published materials. Franklin (2004) asserts that data collected from documentary analysis is used to validate data collected from using other methods. These included reports, academic journals, papers, government documents and books on customer satisfaction.

3.7 Data Collection Instruments

Data collection tools or techniques are instruments used to record the information that is gathered through a particular method. Tools are central to quantitative data collection because quantitative methods rely on structured, standardised instruments like questionnaires. Tools such as open ended questionnaires or check list are often used in qualitative data collection as a way to guide a relatively standardised implementation of a qualitative method (Mtatifikolo, 2010). This study used questionnaire as data collection instrument as it intended to gather views on electricity conventional billing system from customers.

3.7.1 Questionnaire

Questionnaire is a collection of items to which a respondent is expected to react in writing. The questionnaire was used since the study is concerned with variables that

cannot be directly observed such as views, opinions, and feelings of the respondents. Such information is best collected through questionnaires (Touliatos and Compton, 1988). Questionnaires with items on assessment of the domestic customer satisfaction on electricity conventional billing system established by TANESCO was distributed to TANESCO's domestic customers and administered by the researcher.

3.8 Measurement of Dependent and Independent Variables

This study discussed the following variables and their measurements included: electricity conventional billing system was independent variable which was measured by determining whether or not customers were satisfied by the modality of electricity conventional billing payment.

Another measurement was meter reading. In order for a customer to pay actual amount according to the unit he used, reading meters should be accuracy. The study used this independent variable to identify whether or not meter reading was done correctively to increase customer satisfaction on the services offered by TANESCO. Electricity price was another independent variable used to measure customer satisfaction on electricity conventional billing system in Tanzania. This variable was used to identify whether or not electricity price per unity matched with the status of the customers.

3.9 Measurement of Validity and Reliability of Data

3.9.1 Measurement of Validity

Validity refers to the extent to which the concept one wishes to measure is actually being measured by a particular scale or index, which is the extent to which an

account accurately represents the social phenomena to which it refers (Babbie, 1992). To ensure validity of measures, the data was collected from TANESCO's domestic customers. The questionnaires for this study were pilot- tested to some customers and their comments were used to modify the questionnaires so as to be able to capture the required information.

3.9.2 Measurement of the Reliability

Patton (2002) defines reliability as the consistency with which repeated measures produce the same results across time and across observers. Lewis (1999) argues that there are a number of different approaches to measure reliability of data in research. These include the test-retest method, the alternative form method, and the split-halves method. For the case of this study, reliability was measured through the test-retest method using questionnaire instrument distributed to TANESCO's domestic customers from Tabata, Viwandani and Gongo la Mboto.

3.10 Data Analysis Process

Data analysis deals with uncovering underlying structures, extracting important variables, detecting any anomalies and testing any underlying assumptions. During this study both qualitative and quantitative approaches were applied. The collected data of this study was edited, coded and analysed descriptively with the aid of Statistical Package for Social Sciences. Data was entered into SPSS programme that finally produced descriptive tables with frequencies and percentages of responses. These tables were used to present the findings in details as well as study discussion.

CHAPTER FOUR

PRESENTATION OF FINDINGS, ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter presents the findings of the study. It also analyses and discussions the findings. The findings, analysis and discussions are presented in the contexts of general and specific objectives. Thus, this chapter presents general characteristics of the study, identifies the modality of paying electricity bills; determines the extent to which domestic customers are satisfied with electricity metre reading; identifies electric unit price paid by customers; and examines the challenges facing customers using conventional electric meters on billing system.

4.2 General Characteristics of the Respondents

This part presents the profile of the respondents in terms of sex, marital status, age and educational background of the respondents. This study gathered data from 242 (100%) respondents who filled in the questionnaires distributed. and administered by the researcher.

4.2.1 Sex of the Respondents

Respondents were asked about their sex. The Table 4.1 below provides respondents' responses:

Table 4.1: Sex of the Respondents

Responses on Sex	Frequency (N)	Percent (%)
Male	184	76.0
Female	58	24.0
Total	242	100.0

Source: Compiled from Field Data

Table 4.1 shows that out of 242 respondents, 184 (76%) were male and 58 (24%) respondents were female. The results implied that male were dominant in this research because traditionally male were also dominant in owning houses. Women were the second in owning houses in most areas in Tanzania and therefore to take charge in their husbands absences.

4.2.2 Marital Status of the Respondents

The respondents were asked about their marital status. The following results were revealed by the respondents as indicated in Table 4.2:

Table 4.2: Marital Status of the Respondents

Responses on Marital Status	Frequency (N)	Percent (%)
Single	72	29.8
Married	122	50.4
Widow	35	14.5
Divorced	13	5.4
Total	242	100.0

Source: Compiled from Field Data

Table 4.2 reveals that out of 242 respondents, 122 (50.4%) of the respondents were married and 72 (29.8%) of the respondents were single. The results also reveal that 35 (14.5%) of the respondents were widows and 13 (5.4%) of the respondents were divorced.

Generally, the majority of respondents 168 (70%) of the respondents had already tasted marriage. These results implied that social arrangement was very complex that involved various people with different status. Marital status was sought by this study

because it had effects on the uses of conventional electricity meters. It was assumed that widows could have financial difficult and therefore failed to pay for LUKU installation in their houses. However, the results were different. In this line Zanden (1988) is of view that usually, communities have arrangements and beliefs related to family matters, throughout the world there are many arrangements for regulating mating and reproduction, caring for and bringing up children and meeting personal deeds.

4.2.3 Age of the Respondents

The responses of the respondents about their ages were as indicated in table 4.3:

Table 4.3: Age of the Respondents

Responses	Frequency (N)	Percent (%)
18-25	50	20.7
26-35	144	59.5
36-45	35	14.5
46-55	13	5.4
Total	242	100.0

Source: Compiled from Field Data

Table 4.3 reveals that out of 242 respondents, 144 (59.5%) of the respondents were between 26-35 years old and 50 (20.7%) of the respondents were between 18-25 years old. Again, the table shows that 35 (14.5%) of the respondents were between 36-45 years old and 13 (5.4%) of the respondents were between 46-55 years old.

In general the majority of respondents 194 (80.8%) were youths. These results implied that most of those who filled in the questionnaire were youths. This might be associated by the ability of reading and writing among them compared to other ages as well as the tendency of African tradition which always demand youths to respond to matters concerning reading and writing information which is not purely relating to family.

4.2.4 Level of Education of the Respondents

Respondents were asked about their education background. The following were there responses as indicated in Table 4.4:

Table 4.4: Level of Education of the Respondents

Responses	Frequency (N)	Percent (%)
Primary	73	30.2
Ordinary level secondary school	109	45.0
Advanced level secondary school	21	8.7
Diploma	24	9.9
Bachelor Degree	15	6.2
Total	242	100.0

Source: Compiled from Field Data

Table 4.4 reveals that out of 242 respondents, 109 (45%) of the respondents were ordinary level secondary school leavers and 73 (30.2%) of the respondents were primary school leavers. The table also shows that 24 (9.9%) of the respondents were diploma holders, 21 (8.7%) of the respondents were advanced level secondary school leavers, and 15 (6.2%) were bachelor degree holders.

Generally, the majority of the respondents were secondary school leavers as they counted 130 (53.7%) of the respondents. These results might have negative or positive implications of the results of this study as some scholars argue that education is often the best tool for creating wealth and happiness. Education can help your long-term economic prospects and help you to obtain, keep, and maintain a home or business in the future (Kezar *et al*, 2007).

4.3 Findings, Analysis and Discussion

This part presents the findings of the study. It also analyses and discusses the findings of the study in accordance to the objectives of the study.

4.3.1 Identify the Modality of Paying Electricity Bills

The first objective of this study was to identify the modality of paying electricity bills. The findings on these objectives are presented in the context of identifying the modality of paying electricity bills, determining the extent to which domestic customers are satisfied with electric meter reading; and to identifying electricity unit price paid by customers.

4.3.1.1 The Modality of Bill Payment

Respondents were asked about the modality of bill payment. The following were their responses as indicated in Table 4.5.

Table 4.5 reveals that out of 242 respondents, 222 (91.7%) of the respondents paid their electricity bills through electric meter (they paid their bills after they had enjoyed the service). It also shows that 20 (8.3%) of the respondents paid their bills through LUKU (prepaid system).

Table 4.5: Modality of Bill Payment System

Responses	Frequency (N)	Percent (%)
Electric meter	222	91.7
LUKU	20	8.3
Total	242	100.0

Source: Compiled from Field Data

Generally, the majority respondents paid their bills through electric meter. Even those who paid their bills through LUKU had other houses with electric meters. These results implied that the majority of respondents were still using traditional bill payment mechanism which is now outdated as the world is in the era of paying according to what one uses. TANESCO (2013) asserts that the company accepts two types of payment namely prepaid and payment after use.

4.3.1.2 The status of Electricity Conventional Billing System

Respondents were asked to rate the status of electric billing system. Their responses were as shown in Table 4.6:

Table 4.6: The Status of Electricity Conventional Billing System

Responses	Frequency (N)	Percent (%)
Excellent	18	7.4
Very good	121	50.0
Average	62	25.6
Weak	41	16.9
Total	242	100.0

Source: Compiled from Field Data

Table 4.6 shows that out of 242 respondents, 121 (50%) of the respondents rated very good on status of conventional billing system. It also reveals that 62 (25.6%) of the respondents rated an average status of electricity conventional system and 41 (16.9%) of the respondents rated a weak status of electricity conventional billing system. Again, the table shows that 18 (7.4%) of the respondents rated excellent performance of electricity conventional billing system.

Generally, the results revealed that 139 (57.4%) of the respondents revealed very good performance of electricity conventional billing system. These results implied that respondents enjoyed much the services which its payment was made after use. Thus, they were satisfied with the modality of paying electric bills.

4.3.1.3 Customer Satisfaction on Electricity Conventional Billing System

Respondents were asked to rank their satisfaction on electricity conventional billing system. The results were as shown in Table 4.7:

Table 4.7: Customer Satisfaction on Electricity Conventional Billing System

Responses	Frequency (N)	Percent (%)
Strongly agree	38	15.7
Agree	138	57.0
Strongly disagree	25	10.3
Disagree	36	14.9
I don't know	5	2.1
Total	242	100.0

Source: Compiled from Field Data

Table 4.7 reveals that out of 242 respondents, 138 (57%) of the respondents agreed that they satisfied with conventional billing system. The Table 4.7 also shows that 38 (15.8%) of the respondents strongly agreed that they satisfied with conventional billing system.

It further shows that 38 (15.7%) of the respondents strongly agreed that they satisfied with conventional billing system. 36 (14.9%) of the respondents disagreed that they satisfied with conventional billing system. While 25 (10.4%) of the respondents strongly disagreed that they satisfied with conventional billing system, 5 (2.1%) of the respondents did not know whether or not they were satisfied with conventional billing system.

In general, the results revealed that most customers (72.7%) were satisfied with electricity conventional billing system. These results mean that electricity conventional billing system was good to customers as it did not demand them to pay before they had used the service. Some scholars like Peter (2008) argue that the value of the product characteristics provided to corporate clients is positively related to satisfaction. Thomas (2006) reveals that customer satisfaction with service rendered is an independent of quality of physical evidence perceived.

4.3.2 Determining Domestic Customer Satisfaction on Electric Meter Reading

The second objective of this study was to determine customer satisfaction on electric meter reading. The findings on these objectives are presented in regards to reader of electric meter, responsible person for wrong doing, participation of both parties in electric meter reading and accuracy meter reading.

4.3.2.1 The Reader of Electric Meter

Respondents were asked about the person (persons) who read their electric meter.

The following were their responses as indicated in Table 4.8:

Table 4.8: The Reader of Electric Meter

Responses	Frequency (N)	Percent (%)
TANESCO workers	146	60.3
You and TANESCO workers	86	35.5
I don't know	10	4.1
Total	242	100.0

Source: Compiled from Field Data

Table 4.8 reveals that out of 242 respondents, 146 (60.3%) of the respondents said that meter readers were TANESCO workers. It also shows that 86 (35.5%) of the respondents were reading electric meters with TANESCO workers. On the other hand, 10 (4.1%) of the respondents did not know who was reading electric meter.

In general, the majority respondents (60.4%) revealed that TANESCO workers were the readers of electric meters. These results implied that the responsibility of reading of meters was in the hand of TANESCO and customers were not involved in meter reading. However, it should be noted that both parts are responsible for electric meter and if one part is not involved is a weakness of either parts for not either knowing or not fulfilling its obligations. In this regards, PUC - Customer Protection Division (2014) asserts that the electric customer and the electric utility share responsibility of electric meter. Electric utilities install and maintain meters at

customer locations to ensure proper measurement and billing of electric service. It is the responsibility of the electric utility to maintain the accuracy of the electric meters. Electric utilities must replace any meter that does not measure electricity used within applicable standards for accuracy. It is the customer's responsibility to provide an appropriate location, necessary equipment, such as an electric meter can and wiring, and access to the meter.

4.3.2.2 Responsible Person for Wrong Doing

Respondents were asked about a person who was responsible for wrong doing, specifically for meter reading. Their responses were as shown in Table 4.9:

Table 4.9: Responsible Person for Wrong Doing

Responses	Frequency (N)	Percent (%)
TANESCO workers	201	83.1
Customers	41	16.9
Total	242	100.0

Source: Compiled from Field Data

Table 4.9 reveals that out of 242 respondents, 201 (83.1%) of the respondents said that TANESCO workers were responsible for wrong doing in meter reading. On the other hand 41 (16.9%) of the respondents said that electric customers were responsible for wrong doing in meter reading.

These results which showed majority respondents (83.1%) saying that TANESCO workers were responsible for wrong doing implied that TANESCO was responsible for reading electric meters and therefore any problem concerning electric meters was

TANESCO's. The results also implied that customers were not more concern with electric meters as they thought the meters were not their belongings.

However, the issue of electric meter reading is for both parts TANESCO and customers and the later have a right of lodging complaints in the right authority if he/she thinks there is any wrong with his electric meter. Consequently, both parts are responsible for any activity related to electric meter as they are also responsible for installing, maintaining and repairing all equipment beyond the service connection point except for the electric meter. So long as customers were not involved in that particular activity, they were not satisfied with that particular service.

4.3.2.3 Participation in Meter Reading

Respondents were asked to indicate whether or not were participating in meter reading. Table 4.10 reveals the responses:

Table 4.10: Participation in Meter Reading

Responses	Frequency (N)	Percent (%)
Yes	109	45.0
No	120	49.6
I don't know	13	5.4
Total	242	100.0

Source: Compiled from Field Data

Table 4.10 reveals that out of 242 respondents, 120 (49.6%) of the respondents said that they participated in electric meter reading. 109 (45%) of the respondents said

they did not participate in electric meter reading. However, 13 (5.4%) of the respondents did not know whether or not they participated in electric meter reading.

These results imply that customers were not involving in meter reading. The reasons might be lack of understanding that they must also involve in meter reading. Additionally, most of them lacked the knowledge of reading electric meters, hence they were not satisfied with the exercise.

4.3.2.4 The Accurate of Meter Reading

Respondents were asked about meter reading accurately. Their responses were as indicated in Table 4.11:

Table 4.11: The accurate of Meter Reading

Responses	Frequency (N)	Percent (%)
Yes	30	12.4
No	188	77.7
I don't know	24	9.9
Total	242	100.0

Source: Compiled from Field Data

Table 4.11 shows that out of 242 respondents, 188 (77.7%) revealed that their electric meters were not read accurately. On other hand, 30 (12.4%) of the respondents said that their electric meters were accurately read. Furthermore, the table shows that 24 (9.9%) of the respondents did not know whether or not their electric meters were read accurately.

These results showed that the issue of accuracy in electric meter reading was critical. There was either accurate or inaccuracy electric meter reading. Thus, customers were not satisfied with accuracy of electric meter reading. Mollel (2007) reveals that the degree of inaccuracy of customer bills had not yet improved even after the Net Group Solution took over the TANESCO's management. Again, meter problem contributed to inaccuracy.

Vanasse (2002) is of view that whereas the indicators put forward by the industry suggest that a tiny proportion of consumers had problems with their meters, the data indicated a considerably larger problem: 15% of respondents reported a problem with their meter to their utility. Sarota (2009) asserts that there was a significant difference in the level of satisfaction between service processed manually and the one processed electronically in terms of reliability, relevance, accuracy, timeliness, and efficiency.

4.3.3 Identifying Electric Unit Price Paid by Customers

The third objective of this study was to identify electric unit price paid by customers. The findings on these objectives are presented in the context of price per unit, customer consumptions and the effect of electricity price to customer's life.

4.3.3.1 Price Per Electric Unit

Respondents were asked the price of electricity per unit. Their responses were as shown in Table 4.12:

Table 4.12: Price Per Electric Unit

Responses	Frequency (N)	Percent (%)
100 Tzshs	115	47.5
131-150 Tzshs	127	52.5
Total	242	100.0

Source: Compiled from Field Data

Table 4.12 above shows that out of 242 respondents, 115 (47.5%) of the respondents were paying 100Tzshs per unit. On the other hand 127 (52.5%) were paying above 100Tzshs. These mean that the majority of TANESCO's customers were not belonging to low electric consumption who was supposed to pay 100 Tzshs per unit.

These results implied that the majority customers were not lower users of electricity as lower users paid 100 Tzshs per unit. However, most of them were obliged to pay according to what they consumed despite the fact that their willingness to pay was not due to better services. It should be noted that in Tanzania, TANESCO was the sole company providing electricity services. Thus, people had no choice despite their dissatisfaction of the service given. For instance, Mollel (2007) observed that generation of power was not satisfying the available demand leading to overloading that may cause power fluctuation. Again, Sindaguru (2009) is of view that factors influencing customer perceptions of TANESCO services were not uniform in terms of significance and magnitude.

4.3.3.2 Electric Price and the Service Offered by TANESCO

Respondents were asked whether or not the price they paid was equivalent to the electricity services offered by TANESCO. The following were the results as indicated in Table 4.13:

Table 4.13: Electric Price and the Service Offered by TANESCO

Responses	Frequency (N)	Percent (%)
Yes	119	49.2
No	90	37.2
I don't know	33	13.6
Total	242	100.0

Source: Compiled from Field Data

Table 4.13 shows that out of 242 respondents, 119 (49.2%) of the respondents said yes about whether electricity price was equivalent to electricity services offered by TANESCO. On the other hand 90 (37.5%) of the respondents said no to whether electricity price was equivalent to electricity services offered by TANESCO.

Generally the results showed that the majority respondents (62.5%) said that the price paid to TANESCO was not equivalent to the service provided by the said company. These results implied that the services offered by TANESCO were not satisfactory. However, Rekettye and Pintér (2000) find that satisfied customers have higher price acceptance. again, Babatunde and Shuaibu (n.d) reveal that income, the price of substitute and population emerges as the main determinant of electricity demand in Nigeria, while electricity price is insignificant.

4.3.3.3 The Effect of Electric Price to Customer's Life

Respondents were asked whether or not electricity price affected customers' life.

Their responses were as indicated in Table 4.14:

Table 4.14: The Effect of Electricity Price To Customer's Life

Responses	Frequency (N)	Percent (%)
Very high	105	43.4
High	57	23.6
Average	27	11.2
Low	46	19.0
Very low	7	2.9
Total	242	100.0

Source: Compiled from Field Data

Table 4.14 revealed that out of 242 respondents, 105 (43.4%) of the respondents said that electric price affected their life very high. Likewise, 57 (23.6%) of the respondents said that electricity price affected highly the life of customers. Low effect of electricity price to the life of customers counted 46 (19%) and 27 (11.2%) of the respondents said that electricity price affected the life of customers averagely. Very low effected of electricity price to the life of customers counted 7 (2.9%).

Generally, the majority of respondents (67%) revealed that electricity price affected very high customers' life. These results implied that customers cut out some of activities which demanded electricity in order to pay according to what they have. The high price of electricity may be due to the uses of oil which is high in price and therefore leads to high electric price.

As the result, their economic activities suffered too. These results also implied that most customers were not satisfied with the serviced offered by TANESCO. For instance, Wolfram *et al* (2012) argue that the main driver of the growth is likely to be increased incomes among the poor and near-poor. We document that as households

come out of poverty and join the middle class, they acquire appliances, such as refrigerators, and vehicles for the first time. These new goods require energy to use and energy to manufacture.

Cantore *et al* (2012) is of the views that oil price increases can harm countries with abundant oil but low refinery capacity. In such cases, an oil price will lead to fuel price stabilisation policies such as fossil fuel subsidies, which affect the national budget negatively and generate adverse environmental effects.

4.3.4 Examining the Challenges Facing Customers Using Conventional Electric Meters on Billing System

The fourth objective of this study was to examine the challenges facing customers using conventional electric meters on billing system. The findings on these objectives are presented in the context of travel distance to electric pay station, the effect of long distance of pay station to the customers, time spent in paying electric bill, reliability of conventional billing system and confidence of customers on the security of electricity conventional bill.

4.3.4.1 Travel Distance to Electric Pay Station

Respondents were asked if they travelled long distance from their residents to electric pay stations. Their respondents were as indicated in Table 4.15:

Table 4.15: Travel Distance to Electric Pay Station

Responses	Frequency (N)	Percent (%)
Yes	190	78.5
No	35	14.5
I don't know	17	7.0
Total	242	100.0

Source: Compiled from Field Data

Table 4.15 revealed that out of 242 respondents, 190 (78.5%) of the respondents indicated that they travelled long distance to electric pay stations. On the other hand, 35 (14.5%) of the respondents denied that they travelled long distance to electric pay stations. 17 (7%) of the respondents revealed that they did not know whether or not they travelled long distance to electric pay stations.

Generally, the results show that the majority electric customers travelled long distance to electric pay stations. These results may have implication that most of the customers did not pay their bills in time as it could be difficult to go to the pay stations to collect the bills and then back to pay them, hence they were not satisfied with the said distance.

4.3.4.2 The Effect of Long Distance of Electric Pay Stations to the Customers

Travel distance to the service might have negative impact to the customers. Respondents were asked whether or not travelling distance to electric pay stations affected them negatively. Their responses were as indicated in Table 4.16:

Table 4.16: The Effect of Long Distance to Electric Pay Station to the Customers

Responses	Frequency (N)	Percent (%)
Very high	98	40.5
High	84	34.7
Average	37	15.3
Low	13	5.4
Very low	10	4.1
Total	242	100.0

Source: Compiled from Field Data

Table 4.16 revealed that out of 242 respondents, 98 (40.5%) of the respondents said that long distance to electric pay stations affected them very high. 84 (34.7%) of the respondents indicated that they were affected highly by long distance to electric pay stations. The table also shows that 37 (15.3%) of the respondents affected in average by long distance to pay stations. While 13 (5.4%) of the respondents affected lowly, 10 (4.1%) of the respondents affected very low by long distance to electric pay stations.

These results imply that customers might have negative feelings on the services offered by TANESCO due to long travelling distance to electric pay stations. This implied that they were not satisfied with the service offered. In this line, Mollel (2007) in his study found that TANESCO had not improved its services to customers despite outsourcing some of the services to private agent.

4.3.4.3 Time Spent in Paying Electric Bill

Customers were asked whether or not they spent much time in paying electric bills. The results were as indicated in Table 4.17:

Table 4.17: Time Spent in Paying Electric Bill

Responses	Frequency (N)	Percent (%)
Very high	97	40.1
High	86	35.5
Average	16	6.6
Low	31	12.8
Very low	12	5.0
Total	242	100.0

Source: Compiled from Field Data

Table 4.17 reveals that out of 242 respondents, 97 (41.1%) of the respondents spent much time in paying electric bills. It also shows that 86 (35.5%) of the respondents spent their time highly in paying electric bills. 31 (12.8%) of the respondents spent their little time in paying electric bills. While 16 (6.6%) of the respondents spent average time in paying electric bills, 12 (5%) of the respondents spent very little time in paying electric bills.

These results imply that electric customers spent a lot of time in paying electric bills. The time spent included travelling to electric pay stations as well as long queues. Despite the fact that this might be an indicator of customer dissatisfaction on the services offered by TANESCO, it slows down individual productivity. Instead of using the said time in production, it is used for paying electric bills. Likewise, Sarota (2009) found that people who spend a lot of time for service delivery had a negative feeling on the service delivery.

4.3.4.4 Reliability of Conventional Billing System

Respondents were asked about reliability of conventional billing system. Their results were as indicated in Table 4.18:

Table 4.18: Reliability of Conventional Billing System

Responses	Frequency (N)	Percent (%)
Yes	192	79.3
No	38	15.7
I don't know	12	5.0
Total	242	100.0

Source: Compiled from Field Data

Table 4.18 reveals that out of 242 respondents, 192 (79.3%) of the respondents showed that conventional billing system was reliable. 38 (15.7%) of the respondents indicated that conventional billing system was not reliable. However, 12 (5%) of the respondents indicated that they did not know whether or not conventional billing system was reliable.

These results imply that most electric conventional meters' customers satisfied with conventional billing system as it did not demand them to prepay the services which to some of the customers seems to be difficult. However, these results differ from Eder and Christophers (2013) who find a set of critical factors like reliability, trust, transparent communication and satisfying the needs of the local people. They also find some challenges on payment system, tariffs, and investment costs must which did not satisfy specific requirements and therefore lead to ineffective and inefficient that affected the rate of adoption.

4.3.4.5 Confidence of Customers on the Security of Electricity Conventional Bill

Respondents were asked whether they were confident on the security of electric conventional bills. Their responses were as indicated in Table 4.19:

Table 4.19: Confidence of Customers on the Security of Electric Conventional Bill

Responses	Frequency (N)	Percent (%)
Very high	85	35.1
High	90	37.2
Average	37	15.3
Low	19	7.9
Very low	11	4.5
Total	242	100.0

Source: Compiled from Field Data

Table 4.19 reveals that out of 242 respondents, 90 (37.2%) of the respondents indicated high confidence of customers on the security of electric conventional bills. It also shows that 85 (35.1%) of the respondents indicated very high confident on the security of electric conventional bills. 37 (15.3%) of the respondents showed an average confidence of customers on the security of electric conventional bills. While 19 (7.9%) of the respondents showed low confidence of the customers on the security of electric conventional bills, 11 (4.5%) of the respondents indicated very low confidence of customers on the security of electric conventional bills.

These results imply that customers were satisfied with the security of electric conventional bills due to various reasons including after payment system which most of them seemed to enjoy. However, these results oppose Mollels (2007) who found that TANESCO had not improved its services to customers despite outsourcing some of the services to private agent. It was observed that generation of power was not satisfying the available demand leading to overloading that may cause power fluctuation.

It was also found that the findings also showed that the degree of inaccuracy of customer bills had not yet improved even after the Net Group Solution took over the TANESCO's management. Again, Idindili (2007) who conducted a study on analysis of service marketing strategies used by utility organization in Tanzania found that deficiencies in the use of service marketing strategies was among the challenges facing TANESCO.

4.4 Discussion of the Findings

On identifying the modality of paying electricity bills, the study found that there were two types of paying electricity bills. These were pre-paid and payment after use. The results showed customers satisfaction on electricity conventional billing system. These results aligned with those of Peter (2008) who argues that the value of the product characteristics provided to corporate clients is positively related to satisfaction. Thomas (2006) reveals that customer satisfaction with service rendered is an independent of quality of physical evidence perceived.

However, it also showed that despite the fact that most people enjoyed electricity conventional billing system, there were some challenges with this modality of bill payment. These were inaccuracy billing, meter reading delay and billing delay, which implied dissatisfaction of the services.

On determining the extent to which domestic customers are satisfied with electric meter reading, the study found that TANESCO workers were the ones who read electric meter. It was also found that in some cases electric meters were not read accurately. Thus, both TANESCO and customers were not keen in making sure that meter reading exercise could be done accurately. It was further found that TANESCO was responsible for wrong electric meter reading if any as they did not involve their customers. The results were contrary to Division (2014) who asserts that the electric customer and the electric utility share responsibility of electric meter. Electric utilities install and maintain meters at customer locations to ensure proper measurement and billing of electric service. It is the responsibility of the electric utility to maintain the accuracy of the electric meters.

On identifying electric unit price paid by customers, the study found that most customers were not lower users of electricity. It was also learnt that the services offered by TANESCO were not satisfactory to most customers despite the fact that they paid their bills accordingly. However, it was found that high price per electric unit had negative impact to the lives of customers as they failed to continue with economic and social activities involved electricity. These results differ with those of Mollel (2007) who observed that generation of power was not satisfying the available demand leading to overloading that may cause power fluctuation. Again, Sindaguru (2009) is of view that factors influencing customer perceptions of TANESCO services were not uniform in terms of significance and magnitude.

On examining the challenges facing customers using conventional electric meters on billing system, it was found that there were some challenges on conventional billing system. These challenges included long distance travel to electric pay stations that created negative impact to the services offered by TANESCO and customers spending a lot of time in paying electric bills and therefore affected economic production. The results concurred with those of Idindili (2007) who asserts that deficiencies in the use of service marketing strategies were among the challenges facing TANESCO. Again, Molllels (2007) asserts that TANESCO had not improved its services to customers despite outsourcing some of the services to private agent.

Furthermore, Eder and Christopher (2013) are of the view that there is a set of critical factors like reliability, trust, transparent communication and satisfying the needs of the local people. They also mention some challenges such as payment

system, tariffs, and investment costs as the things which did not satisfy specific requirements and therefore lead to ineffective and inefficient that affected the rate of adoption.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter concludes the study. It presents the summary of the study. It also concludes and offers recommendations and areas for further studies.

5.2 Summary of the Main Findings

This study was about assessing customer satisfaction on electricity conventional billing system in Tanzania. The aims of this study were: to identify the modality of paying electricity bills; to determine the extent to which domestic customers are satisfied with electricity metre reading; to identify electric unit price paid by customers; and examining the challenges facing customers using conventional electric meters on billing system. Disconfirmation and service quality theories were used to guide the study. The study used questionnaire to gather data from 242 respondents whose responses were descriptively analysed with the aid of SPSS.

The study found that there were two types of paying electricity bills. These were prepared and payment after use. The results showed customers satisfaction on electricity conventional billing system. However, it also showed that despite the fact that most people enjoyed electricity conventional billing system, there were some challenges with this modality of bill payment. These were inaccuracy billing, meter reading delay and billing delay.

Further, the study found that TANESCO workers were the ones who read electric meter. It was also found that in some cases electric meters were not read accurately.

Thus, both TANESCO and customers were not keen in making sure that meter reading exercise could be done accurately. It was further found that TANESCO was responsible for wrong electric meter reading if any as they did not involve their customers.

Moreover, the study found that most customers were not lower users of electricity. It was also learnt that the services offered by TANESCO were not satisfactory to most customers despite the fact that they paid their bills accordingly. However, it was found that high price per electric unit had negative impact to the lives of customers as they failed to continue with economic and social activities involved electricity.

Furthermore, it was found that there were some challenges on conventional billing system. These challenges included long distance travel to electric pay stations that created negative impact to the services offered by TANESCO and customers spending a lot of time in paying electric bills and therefore affected economic production.

5.3 Implications of the Findings

The findings implied that most customers were not satisfied with the services offered by TANESCO specifically on conventional billing system. They were many challenges that lead to dissatisfaction of customers on the services offered by TANESCO. These included inaccuracy meter reading, time spent on paying electric bills and long distance to TANESCO pay stations just to mention but a few. Thus, TANESCO needs to look for alternatives for its customers' satisfaction.

5.4 Conclusion

Although this study was about electricity conventional system in which electricity bills were paid after the uses of the services, it was found that there were two main systems of paying electricity bills. These were prepaid and payment after use. However, most of the customers were satisfied with payment after use system for the reasons that it gave them more time of arranging themselves for effecting payment despite some challenges like inaccurate meter reading done by TANESCO.

The finding showed that most of domestic customers were satisfied with meter reading. However, there were some inaccuracies of electric meter reading which did not affect them to the extent of disguising the system. Thus, both parts TANESCO and customers were responsible in reading electric meter although the exercise was left in TANESCO'S hand.

It was learnt that the price per unit of electricity was high as it was more than 300Tzshs. This compelled some electricity users to abandon some of their economic and social activities which were using electricity. As a result, they were negatively affected.

The study found some challenges on conventional billing system. It was found that the majority electric customers travelled long distance to electric pay stations that created negative impact to the services offered by TANESCO. It was also found that customers spent a lot of time in paying electric bills and therefore affected economic production.

5.5 Recommendations

In regards to the findings, the following are the recommendation:

- (i) TANESCO should withdraw from using electricity conventional billing system so that to invest more on prepaid system. It had been learnt that electricity conventional billing system was not effective as it accumulated many debts that prevented the company from implementing most of its projects.
- (ii) In order to maintain accuracy of electric meter reading, both parts TANESCO and customers have be involved as the findings showed that only TANESCO workers were only involving in electric meter reading. By involving both parts will reduce complains and sometimes will help to prevent electricity theft.
- (iii) The price of electricity should be reduced especially for domestic users in order to encourage them to do away from using other sources of electricity which are not only harmful to their health but also to national economy. High price of electricity prevents most of the people from using electricity for economic activities as it adds costs of production to their products which depend much on low income people.
- (iv) TANESCO should have agents or electric pay stations nearby its customers to reduce long distance travel and much time spending in paying electric bills. This, among others, will increase payments in time as well as revenue.

5.6 Limitations of the Study

This study like many other studies of its kind has limitations that need to be taken into account when interpreting its findings and subsequently conclusions. Firstly, the

research employed self-administered questionnaires as a method of data collection and this method normally possess a number of weaknesses. The TANESCO customers were left to complete the questionnaire on their own will. The process of filling the questionnaire relies on the willingness and commitment of the respondents. This may lead to biased responses. However, researcher encouraged the respondents and the researcher considered their respondents as true. Secondly, the sample of the respondents comprises of TANESCO's customers only and therefore lacks other views from other sides. Since the study was customers satisfaction on conventional electricity billing, their views were very important than others although they were also stakeholders of conventional electricity billing. Thus customers' responses could not affect the results. However, these limitations did not compromise with the findings of this study.

5.7 Suggested Areas for Further Studies

Since this study was conducted in three TANESCO's district, Tabata, Viwandani and Gongo la Mboto, the same study can be conducted in other areas for comparison purposes. The comparison is needed on the ground that the other researchers can apply other instruments of data collection such as in-depth interview from TANESCO officials. Another study can also be conducted on the effects of using electric meter reading to TANESCO. Again, another study can be conducted on how high electricity price per unit affect low income earners.

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APPENDICES

Appendix I: Questionnaire

I. Introduction

This questionnaire is intended to collect data which will be used for academic purpose. It is a part of academic requirements of my master degree course in Business Administration at the Open University of Tanzania. I kindly ask you to be part of this study by filling in this questionnaire. I assure you that the information you provide will not be used otherwise from academic purpose and it will remain confidential between me and you.

II. Particulars of Interviewer and Interviewee

A. Particulars of interviewer

Name: Ludia Stanley Kiangi

Affiliation: Student of the Open University of Tanzania

Linkage to research: Researcher.

B: Particulars of interviewee (respondent)

Name: (Option)

Name of an organization/Department.....

Gender: Male () Female ()

Marital status: Single () Married ()

Age..... Education Background

Location.....Title.....

III. QUESTIONS

1. What is the modality of bill payment system do you use?

Electric meter	[]
LUKU	[]
2. How is the billing system?

- | | | |
|----|---|-----|
| | Excellent | [] |
| | Very good | [] |
| | Good | [] |
| | Average | [] |
| | Weak | [] |
| 3. | Is electric billing system satisfying you? | |
| | Strongly agree | [] |
| | Agree | [] |
| | Strongly disagree | [] |
| | Disagree | [] |
| | I don't know | [] |
| 4. | Who reads your electric meter? | |
| | TANESCO workers | [] |
| | I and TANESCO workers | [] |
| | I don't know | [] |
| 5 | Does the meter reading done accurately? | |
| | Yes | [] |
| | No | [] |
| | I don't know | [] |
| 6 | Do you participate in meter reading? | |
| | Yes | [] |
| | No | [] |
| | I don't know | [] |
| 7 | Who is responsible for meter wrong operating? | |
| | TANESCO workers | [] |
| | Customers | [] |
| | Fake TANESCO workers (vishoka) | [] |

- 8 How much do you pay per unit?
- 100Tzshs []
- Above 100Tzshs []
- 9 Is that price per unit relating with the service offered?
- Yes []
- No []
- I don't know []
- 10 To what extent does that price affect your activities/life?
- Very high []
- High []
- Average []
- Low []
- Very low []
- 11 Is the distance from your area to electric pay station considerable?
- Yes []
- No []
- I don't know []
- 12 How is the distance to electric pay station affecting you in term of money?
- Very high []
- High []
- Average []
- Low []
- Very low []
- 13 To what extent does electricity bill payment consume your time?
- Very high []
- High []
- Average []

- Low []
- Very low []
- 14 Is electricity conventional billing system reliable?
- Yes []
- No []
- I don't know []
- 15 How confident over the security aspects of electric conventional billing system
- Very high []
- High []
- Average []
- Low []
- Very low []
- 16 Do you share information with TANESCO on matter related to electric conventional billing system?
- Yes []
- No []
- I don't know []
- 17 Do you pay your bill timely?
- Yes []
- No []
- I don't know []
- 18 What are your views on electric billing system established by TANESCO?
-

THANK YOU FOR YOUR COORPERATION

Appendix II: Table for Determining Sample Size from a Given Population

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—*N* is population size.

S is sample size.

Source: Krejcie and Morgan, 1970