

**INFLUENCE OF PREPAID ELECTRICITY METERS
ADOPTION ON THE LEVEL OF CUSTOMER
SATISFACTION: A CASE OF THIKA SUB COUNTY,
KENYA**

**BY
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**A RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL
FULFILLMENT FOR THE REQUIREMENT OF THE AWARD OF
MASTERS OF ARTS DEGREE IN PROJECT PLANNING AND
MANAGEMENT OF UNIVERSITY OF NAIROBI**

2015

DECLARATION

This is my original work and has not been presented for award of a degree in any other

Institution of Higher Learning

Signature.....Date.....

....

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This project proposal has been submitted for examination with my approval as the
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DEDICATION

I wish to dedicate this work to my husband Simon, my daughter Wangu, my sons Muturi and Ngunjiri for their moral support during this study. Without their cooperation and understanding this work would not have been accomplished.

ACKNOWLEDGEMENT

I would like to sincerely express my gratitude and appreciation to the following people and institutions: First and Foremost, to my heavenly Father who answered my prayer giving me strength, patient and relevant knowledge to complete this proposal; my wonderful supervisor Prof. Christopher Gakuu who guided me throughout the course of this proposal and the constant positive challenges critics that gave me insights into the research project; my resident lecturer Dr. Lydia and other Lecturers like Mr. Wanganga, Dr. Kangethe, Mr. Kinyanjui, Ms. Edith, for their relentless effort in course work completion;

I wish to appreciate my family members, especially my husband Simon Mathenge for their patience during this proposal writing; the Kenya Power management, especially the County Manager ,Kiambu County Mr. WanyoikeMwaura who gave preliminary information as I was compiling this proposal and allowing me the opportunity to conduct this research within the Thika Sub County through his liaison

Special thanks to my close colleagues and friend M/s Mary Kiala, (Senior Administrator, Matuu Hospital and Mr. Bernard Lango (Director and Security personnel trainer, Intel Fire Group of Companies Office), for their unending support in my educational ventures and participation in this research; and my colleagues at Kenya Power office at Thika Arcade the , especially m/s Mary Njoki, Mrs. Grace Muthoni Munga and Mr. George Kamau for their words of encouragement and valuable input and finally to Lawrence Ngunjiri and Teresa Wangu for printing and binding the report.

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ABSTRACT

The purpose of this study will be to investigate the influence of the prepaid electricity meters adoption on the level of customer satisfaction in Thika Sub County. It will be guided by the following objectives: to establish the extent to which the supply reliability in prepaid meters adoption has enhanced the level of customer satisfaction ,to determine the extent to which accessibility of power supply through prepaid electricity meters adoption has enhance the level of customer satisfaction into determine the extent to which customer consumption control provided by the adoption of prepaid electricity meters has enhanced the level customer satisfaction and to establish the influence of customer bills accuracy provided by the adoption of prepaid meters in enhancing the level customer satisfaction in Thika sub county.

Descriptive survey design will be employed for the proposed study .The study will target 123 respondents consisting of customers in ThikaSub County. The sample will involve 129 customers where the County prepaid Metering project engineer will be purposely chosen because he is central to the project. Data will be collected using customer questionnaires and Prepaid Metering interview schedule. The test retest will be used in testing the reliability of instruments to be used.

During the actual study, 196 respondents will be contacted and questionnaires distributed to customers and KPLC staff for response. They will then be collected after two weeks .The Thika County Customer service office will be will be interviewed to clarify on issues related to prepaid metering project and its influence on level of customer satisfaction. This will major on the influence of supply reliability, supply accessibility, customer consumption control and bill accuracy on the level of customer satisfaction in KPLC, ThikaCounty. Quantative data from the customer questionnaire and Staff questionnaire and will be analyzed using descriptive statistics. Data will be analyzed with the help of

statistical package for social sciences programmed. The findings were then drawn from the collected data after which the researcher made based on the findings.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Prepayment systems refer to the outlay made by a consumer for using a good or service before consumption. In the case of electricity, the distinctive feature of the prepayment system is the reversion of the conventional commercialization system: whereas in the latter consumers hold a consumption credit because they pay for their energy bills periodically and after consumption, in the prepayment system such credit is not available because the purchase and payment of energy are made prior to consumption. Thus, prepaid systems allow users to consume energy only when they have credit in electricity account, as supply is discontinued when such credit is exhausted Gujor and Otasowie (2010) .

The prepaid metering system is a new billing approach in the energy sector that includes a superior electronic customer accounts management system. It integrates metering equipment with smartcard technology. It not only provides a utility but also substantial savings in manpower and money, while providing new payment options for customers. It reduces operational costs because it applies paperless revenue collection system and can replace any electromechanical meter in the market (Hangzhou Pax Electronic Technology, 2012).

Globally, there has been an increase in the number of customers preferring to use prepaid meters. For instance, in the United Kingdom, there has been a long tradition of offering prepaid metering as an option to customers. Up to 15-20 percent of customers have signed up for the option (Chartwell, 2003). Northern Ireland Electricity which has a customer-friendly prepayment system has increased prepayment enrolment to 25 percent (Energy watch,

2005). At Arizona's Salt River Project, more than 50,000 customers (about 6 percent) are on prepaid meters (Chartwell, 2008). In Ontario, Woodstock Hydro reports that 25 percent of residential customers have opted to use the prepaid system.

The prepayment technology was initially developed in South Africa in the late 1980s with the objective of supplying energy to a large number of low-income and geographically dispersed users. The system was initially geared to minimizing the difficulties arising from users' irregular incomes and to overcoming the limited development of the infrastructure required for the dispatch and reception of credit slips. By the late 1990s, prepayment systems were very popular in India and in some OECD countries (Estache *et al.*, 2000), and had probably reached their highest development in Great Britain (Waddamset *et al.*, 1997). In Argentina, prepayment meters were firstly introduced in 1993, when Energía Mendoza Sociedad del Estado (EMSE) put a few running in small shops at the Mendoza Bus Central Station. The experience was soon extended to other communities in the country.

In line with this, the Kenya power started prepaid electricity metering in April 2009 on pilot basis. Rollout of the project commenced in March 2011, and by 30th June 2011 a total of 123,000 prepaid meters had been installed throughout the country with a majority of them in Nairobi (Kenya Power corporate strategic plan 2011/12 to 2015/16). The project had been rolled out to other regions in the country (Kenya Power, 2011).

Kenya Power adopted prepaid metering to improve on efficiency, the quality of service offered and also empower customers to control the cost of electricity. When they were introduced, it was expected that the prepaid electricity meters from KPLC would be a relief given the many problems associated with postpaid meters. The postpaid system had been

blamed for not returning accounts deposits, consumers having no control over their consumption, unpleasant disconnection, high reconnection fees, corruption during disconnection and reconnection of power and the estimated bills, which would be hilarious for their gross miscalculations were it not for the fact that one had to pay (Kinyoda ,2013) The prepaid meters were believed that would save electricity and be more convenient for consumers.

However most of the prepaid customers are finding it difficult to understand KPLC's complex domestic. Tariff (DC), when applied to prepayment due to its stepped nature. According to Kenya Power Annual Report (2009), the postpaid system has been blamed for very many customer complaints. In addition, energy provision companies are unable to keep track of the changing demand for domestic consumers as some consumers face problems of being invoiced for bills that have already been paid as well as poor reliability of electricity.

An inquest into the success of the electricity prepaid metering in Kenya has shown that so far, several consumers have complained on limited places where one can buy tokens, delay in purchasing electricity token through mobile phone money transfer, long digits or codes and varying rates of units for the same amount(Nyambega, 2011). A study conducted by Chege (2012) also established various complaints from Kenya power customers regarding the prepaid meters. Some of the complaints were that pre-paid meters do not give the consumers a breakdown of their consumption, breeding suspicion that it is expensive.This study therefore will seek to establish the influence of use of prepaid electricity meters on the level of customer satisfaction in Kenya power, Thika Sub County.

1.2 Statement of the Problem

Kenya Power adopted prepaid metering to improve on efficiency, the quality of service offered and also empower customers to control the cost of electricity. When they were introduced, it was expected that the prepaid electricity meters from KPLC would be a relief given the many problems associated with postpaid meters. The postpaid system had been blamed for withholding customers accounts deposits, consumers having no control over their consumption, unpleasant disconnection, high reconnection fees, corruption during disconnection and reconnection of power and the estimated bills, which would be hilarious for their gross miscalculations were it not for the fact that one had to pay (Kinyoda,2013).

On the other hand prepaid meters, were believed to assist the users save electricity and be more convenient for consumers. However most of the prepaid customers are finding it difficult to understand KPLC's complex domestic. Tariff (DC), when applied to prepayment due to its stepped nature. According to Kenya Power Annual Report (2009), the postpaid system has been blamed for very many customer complaints. In addition, energy provision companies are unable to keep track of the changing demand for domestic consumers as some consumers face problems of being invoiced for bills that have already been paid as well as poor reliability of electricity.

An inquest into the success of the electricity prepaid metering in Kenya has shown that so far, several consumers have complained on limited places where one can buy tokens, delay in purchasing electricity token through mobile phone money transfer, long digits or codes and varying rates of units for the same amount(Nyambega, 2011). A study conducted by Chege (2012) also established various complaints from Kenya power customers regarding the prepaid meters. Some of the complaints were that pre-paid meters do not give the consumers

a breakdown of their consumption, breeding suspicion that it is expensive. This study therefore will seek to establish the influence of use of prepaid electricity meters on the level of customer satisfaction in Kenya power, Thika Sub County.

1.3. Research Objectives

1.3.1 Purpose of the study.

The purpose of the study is to investigate the influence of prepaid electricity meters adoption on the level of customer satisfaction in Thika Sub county

1.3.2 Objectives of the study.

The researcher will be guided by the following specific objectives.

1. To determine the influence of power supply reliability of on the level of customer satisfaction in Thika sub county.
2. To establish the influence of power supply accessibility on the level customer satisfaction in Thika sub county.
3. To determine the influence of customer consumption control on the level customer satisfaction in Thika sub county.
4. To establish the influence of accuracy in customer electricity bills on the level customer satisfaction in Thika sub county.

1.4 Research Questions

1. To what extent has power supply reliability influenced the level customer satisfaction in Thika Sub County?
2. Does power supply accessibility influence the level customer satisfaction in Thika Sub County.

3. To what extent has customer power consumption control influenced the level customer satisfaction in Thika Sub County?
4. How does accuracy in customer electricity bills influence the level customer satisfaction in Thika Sub County?

1.5 Significance of the Study

This research will improve the relationship between the service provider and users of prepaid electricity meters. This will lead enhance customer satisfaction and increased revenue for the organization. It will also ease the rolling out of the prepaid electricity metering project to other areas. In particular Kenya Power is set to benefit in that it will be able to anticipate the challenges and thus improvise mechanisms that will mitigate undesirable effects of prepaid metering. Customers also stand a chance to understand, appreciate and embrace this new technology as far as electricity metering in Kenya is concerned. This study will also make a contribution to the body of knowledge in prepaid metering.

1.6 Assumption of the Study.

It is assumed that use of prepaid electricity meters is in progress and that respondents understand the variables influencing the level of customer satisfaction in Thika sub county .It is also assumed that Kenya power staff and customers in Thika sub county are willing to provide factual information .Another assumption is that the Kenya power customer service and banking hall employees can provide the social demographic and economic status of the users of prepaid meters that they serve.

1.7 Limitation of the study

One of the limitations of this project is the availability of the staff to be interviewed .The core respondents are the customer service staff who are always busy attending to customer's queries. At the same time some of the staff may be reluctant to answer the questions to overcome this limitation, To overcome this problem the researcher will endeavor to explain the importance of the researching increasing knowledge towards reducing the challenges related with related to use of prepaid electricity meters .

1.8 Delimitations

The study will be carried out in Thika sub county of Kenya Power utility company. This area has been selected because the use of prepaid electricity meters has been fully implemented .The study will be delimited to Kenya power customer service staff in Thika sub county. The study will be delimited to Kenya Power customer service and field staff constraints that interact with customers on daily bases.

1.9 Definition of significant terms used in the study.

Prepaid meter:This refers to paying for electricity upfront

Accuracy in customer bills: This refers to bills that are free from errors or estimation.

Customer consumption control : This refers to extent to which the customer is able to influence quantity of power energy that is consumed within a given period.

Customer satisfaction: This is a measure of the extent to which a customer's needs are met.

Reliability of power supply: This refers to constant and stable provision of electricity.

Supply accessibility. This refers to availability tokens from different vending points.

Supply without the customer being disconnected due to nonpayment.

1.10 Organization of the Study

The study comprises of three chapters. Chapter one covers the introduction of the study which includes the background of the study, statement of the problem, purpose and objectives of the study among others. Chapter two covers the literature review which includes theoretical framework, conceptual framework and definition of the dependent and independent variables plus their indicator while chapter three covers the research methodology outlining the target population, sample design used, instruments of data collection, sample size and validity and reliability of instruments to be used among others.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION.

This section reviews literature on the influence of prepaid electricity meters on the level customer satisfaction. System theory is applied to theorize how the adoption of prepaid electricity meters has led to quality customer service which is further enhanced by a conceptual frame work linking the variables of interest to the level of customer satisfaction.

The payments of utility bill in Africa have been on postpaid model over the years. In recent years however, most municipalities and utility cooperation's are changing to prepaid models in order to cash on the benefits by the model (Harvey, 2005). Income to municipalities and Utility corporations are dependent on trust between the state and the individual household. The Monthly or quarterly cycle of billing is an expression of a mutual obligation and trust resulting into the provision of services preceding the payment.

However, this trust is often betrayed by customers who miss to pay the bills or not pay on time for various regions The Kenya Power and Lighting Company Limited (KPLC) is a limited liability company which transmits, distributes and retails electricity throughout Kenya. Over the recent decades, it was noted that, electricity bill payments was only made after consumption of electricity. However, according to Steven Ilungole(2011), drastic increase in non-payment of electricity bills by the customers, the many energy utilities have opted to slowly introduce pre-paid meters as a means of trying to reduce frequency of defaulters the defaulters.

Adoption of prepaid electricity meters empowers the customer to control electricity consumption through the pre-paid power system (Geraldo Burns 2010). With a pre-paid meter, paper bills, disconnections and the hassle of reconnections are a thing of the past as one can buy credit slip from any authorized vendor or through the mobile phone. However, according to Prepayment Discussion Paper, 2014 adoption of pre- paid electricity billing has raised regular complains by the electricity consumers. In addition, the Kenya Power image as been put into question by consumers of electricity as they are finding it difficult to understand KPLC's complex domestic. Tariff (DC), when applied to prepayment due to its stepped nature. In spite of the rapid diffusion of post payment systems, the arguments in favor of or against prepaid meters have not been comprehensively examined before and neither has their welfare impact (Casarin and Nicollier, 2009).

Some researchers however see the introduction of prepaid models as capitalistic management of the poor Bond, (2007) noted that in some cases the customer is not consulted when the changes to prepaid models are effected (Bond, 2007, Baptista, 2013). Despite the good intentions, lack of consultation leads to customers not buying-in into the changes and thus bad perception of services and poor customers satisfaction

Therefore, the purpose of this study is to investigate the influence of the adoption of prepaid electricity meters on the level of customer satisfaction and the linking variable as outlined as below: reliability of supply in prepaid electricity meters and Customer satisfaction ,customer consumption control in prepaid electricity meters and Customer satisfaction ,supply accessibility in prepaid electricity meters and Customer satisfaction and bill accuracy in prepaid electricity meters in relation to customer satisfaction.

2.2 Reliability of power supply in prepaid electricity meters and Customer satisfaction

According to Rajkot (2004) reliability refers to the ability of the service provider to perform the promised service accurately and dependably to meet the Product/service end users expectations such as ease of use, safe operation, quality products, durable goods, and easily maintained products, etc. All these enhance better functional performance and or greater ease of use compared to other competing products/services. For the prepaid electricity meter to be adopted it must be tangible, able to give prompt service, trustworthy and the service provider must be competent in advising the customer (Jun & CAI, 2001).

According to a recent International Energy Efficiency report (2013), electric utilities nationwide have increase invested in energy efficiency (EE) programs for their customers throughout the past decade. Most people and businesses which purchase electricity are interested to know how reliable the supply is likely to be. Customers usually would like to know, at the very least, how many unexpected interruptions of supply they might face in a year, and for how long in each case. As a result the deployment of prepaid electricity meters and the resulting information that is generated on energy use and utilities have increased their commitments to providing more targeted customer service.

Customer satisfaction emanate from positioning of a company when customers perceive guarantee that their expectations would be met or exceeded by the product or service."Satisfaction "it can refer to a number of different facets in the relationship with a customer (Oh, 1999). Satisfaction refers to the quality of a particular product or service, the process, an on-going useless relationship, the price-performance of a product/ service or as a result or a product/service meeting or exceeded the customer's expectations.

According to Luo and Bhattacharya, reliability creates customer satisfaction because of the trust relationship that it enables (2006). The customers feel well cared for and not exploited. This is especially established because the manufacturers and distributors of these meters use them in their own homes and recommend them to their family members and friends. Therefore, customer satisfaction can be achieved if the people who install it are more liable for faults in their product. The adoption of the prepaid models has the potential of ensuring constant supply at lower cost, despite of the political and social dimension (Soto, 2012). A well-managed model results into customer satisfaction and positive perception of the organization as well-received services.

According to Kelley and Davis, (1994) change management must determine both *what* customers expect and *how* they expect to get it. Management must plan, implement and control the service offering to limit, reduce, or eliminate service quality gaps. Service quality perceptions are sums of various facets such as responsiveness to customers, reliability, assurance, and tangibles among others (Boulding et al., 1993). All of these are essential in the conversion of electricity products from post-paid to pre-paid models. Customers should have an assurance that the later services will be better and reliable, safer as well as ensuring better response in case of a problem. This is essential given the fact that the normal monthly contact with staff is highly curtailed.

Use of prepaid electricity meters lead to efficiency where energy affordability, customer service, and customer satisfaction, to facilitating and prioritizing long term asset planning, meeting environmental goals, and increasing the reliability and stability of the power grid. According to Kotler, (2009) these are important in helping organizations to identify the gap between a customer's expectations of a service and the perceptions of the service that is

delivered. According to Kenya Power Annual Report (2009), the post paid system has been blamed for very many customer complaints and loss of revenue through power theft, incorrect meter reading and billing, reluctance and inability of consumers to pay electricity bills on time .The application of prepaid energy meter, reduced customer complaints, results into a considerable savings, increased revenue, reduction of losses, efficiency, and overall profitability.

Adoption of Prepaid electricity meters is therefore more reliable because, energy provision companies are unable to keep track of the changing demand for domestic consumers as some consumers face problems of being invoiced for bills that have already been paid as well as poor reliability of electricity supply in post paid meters(Sizmigin, 2003).

2.3.Customer powerconsumption control and level of customer satisfaction

According to Conor (2001) Consumption control involves the regulation of how much money is spent on one's needs .Using prepaid service is one option available to consumers that want to better manage their consumption and optimize their budget allocation. These services are well-known within the insurance and the telecommunication markets. They allow consumers to control their budget and obtain full transparency of consumption; consumers will not receive an unpleasant surprise when they receive monthly invoices. But this concept is not only restricted to the financial services or to mobile telecom services, it is also a viable commercial and marketing concept for the utilities market.

According to Zenithal, Biter and Gremler (2009) customer expectations are the standards of performance or reference points for performance against which service experiences are

compared, and are often formulated in terms of what a customer believes should or will happen. Important to note is that customer perceptions are subjective assessments of actual service experiences. Use of prepaid electricity meter therefore should narrow the gap between expected service and perceived service because this will have implication on the perceived service quality by the customer. However, the research revealed that while the introduction of the prepaid meter increases the revenue collection, it reduces revenue generation because it is reliability based. This means that the consumers were now careful with the way they used (consumed) electricity.

Through pre-paid model, consumers can easily monitor and thereby manage their budget, and by so doing reduce unnecessary and wasteful use of electricity such as non-economizing on lights, and appliances being left turned on (Tewari., 2003). With the poverty levels in Kenya many families live on a budget that they cannot afford to stretch. This is because they have quite a number of needs to take care of one day to day bases. Therefore they must take accountability for every penny they spend by controlling their consumption. Bleuel states that consumption control creates satisfaction such that they are in charge of their lives and in control of what they spend.

The prepaid billing system also has helped reduce the incidence of bribery among Electricity consumers and the Power company task force. According to Kenya Power Annual Report (2009) subscribers who have not paid bills tend to bribe the Power company staff for free electricity and this doesn't help the power company generate the income due to it.

The electricity is purchased as a monetary value encoded as a kilowatt-hour (KWH) value in tokens or codes or vouchers. The meter credit register is only updated once the code is

inserted and accepted by the consumer's meter. Baptista (2013) noted that pre-paid electricity gives consumers autonomy of electricity use and divisibility of energy purchases.

Pre-paid model facilitates forms of sociability and social ordering that are not only exclusively economic, another benefit of prepaid meter billing system is that it encourages savings on electricity consumption unlike the post paid billing. One can choose not to use electricity for the month and in this way minimize his bills. The only bills he may have to pay may just be the service or maintenance bills which are at a flat monthly fee (Robertson, 1967), A post paid billing meter system on the other hand doesn't encourage savings on electricity consumption since there is always a monthly fee to be paid for electricity supply. In Nigeria, the Power Company no longer reads the meters but rather makes use of estimated billing system that ensures that people pay a flat fee every month and this has been increasing over the years.

According to Ogujor and Otasowie (2010) adoption of pre-paid meters has given customer control to a large extent. It is a product that has allowed people to control the electricity they use and therefore the money they spend. They achieve this by purchasing electricity tokens that they can afford. Then they use appliances in their house in such a way that they do not need to purchase any more tokens. Consumption control has been enabled by the fact that the meter records can be taken to calculate the average consumption. This allows deliberate measure to be taken that will allow minimal deviation from what is normal.

Consumption control creates satisfaction for the customer because control is important for the customer. The client should always be in charge of what they use and how they use it as it is their money in use. This makes the consumer the executive party in decisions that involve their product use (Danaher & Mattson, 1994).The knowledge that they are the priority in these decisions will satisfy them and let them know that they are not being cheated.

2.4 Power supply accessibility and customer satisfaction.

The customer will purchase electricity at the nearest electricity vendor Peter and Olson (2008),. The vending of electricity tokens, or vouchers, not only widens the access appoints for the provider, but creates entrepreneurs and business opportunities, thus employment. According to Steven Ilungole(2011) Electricity access and usage is growing in low- and middle-income countries, including South Africa. While many countries across Sub-Saharan Africa have begun to experiment with prepaid meters, there is little rigorous evidence on the effects of prepaid meters on consumption and expenditure patterns and the ability of utility companies to collect payments.

However, Post paid monthly consumption many has been a problem to poverty stricken households according to Steven Ilungole(2011) bills, making it difficult for utilities to sustainably supply them with electricity. One possible strategy for overcoming this is to install prepaid electricity meters, which provide consumers flexibility in the timing of their electricity expenditures while also guaranteeing that utilities are paid for the electricity they supply. One approach is to sell electricity on a prepaid basis. Prepaid electricity meters function much like prepaid cell phone contracts: consumers can purchase electricity in any amount and at any time, in advance of its use. When the balance on a meter runs out, the household's electricity shuts off. Prepaid electricity may benefit both consumers, who have greater flexibility in how and when they purchase electricity and are better able to monitor their own consumption, and also utility companies, who recover a larger share of the money they are owed.

In the case of pre paid meters there are a number of measures that have been put in place to ensure supply is accessible for the market. One measure is that more offices have been established around the country where customers can apply for the meter installation. The application process has been made easy such that it only takes one day and the requirements are kept to a minimal. Also more contractors have been employed by the Kenya Power and Lightning Company to ensure that installation is done as soon as application and all formal requirements are complete.

These have proven to be great measures in enhancing satisfaction of the customer. It is evident from the thousands of application being made every day and the referrals that clients are making to their family members and friends. The positive reviews in newspapers and magazines have also served as proof that customers are fully satisfied with the accessible supply of this electricity billing gadget.

Accessibility of supply refers to creating an easy way for consumers to acquire the product or service that cater for their need. Creating ease of supply is vital in ensuring that a customer is satisfied. This sense of accessible supply creates trust because the procurement method is more transparent and straight forward. For all products suppliers strive to bring the products to the customer as fast as possible before they change their mind and to ensure they do not get their frustration. This frustration makes the customers less enjoys the product and therefore they are not satisfied (Oliver&DeSarbo, 1988).

According to James Lynch (1995) in the case of pre paid meters there are a number of measures that have been put in place to ensure supply is accessible for the market. One

measure is that more pay points should be established around the country where customers can apply for the meter installation. The application process has been made easy such that it only takes one day and the requirements are kept to a minimal. Also more contractors have been employed by the Kenya Power and Lightning Company to ensure that installation is done as soon as application and all formal requirements are complete.

These have proven to be great measures in enhancing satisfaction of the customer. With reference to Kenya Power, it is evident from the thousands of application being made every day and the referrals that clients are making to their family members and friends. The positive reviews in newspapers and magazines have also served as proof that customers are fully satisfied with the accessible supply of this electricity billing gadget. And because of the meter that was installed and being used to measure the consumer's electricity usage, personnel from the electric company will come on a regular basis to check the amount of electricity that the consumers have used thus eliminating the effort on checking their own meter reading. The disadvantage of postpaid systems is that it requires an expensive amount of deposit. When deciding to terminate a customer relationship from the electric company, the refund that the company will give back takes long enough. (Kenya Power Prepaid Meter Electricity User guide, 2011).

2.5. Customer electricity bill accuracy and level of customer satisfaction

A bill is an itemized list of charges. In this case, the charges would be for electricity in use. It is important that the customers are able to receive bills that are accurate. This means bills that are not overcharging them for electricity that is not in use or under charging them as this would cause major losses in the company. Accurate bills will only be possible if accurate measurements are taken and recorded correctly. The readings and billing system must also be

transparent such that the customer can reason out the expenses themselves (Hauser, Simester and Wernerfelt, 1994 p.328). With the Prepaid meter billing system, Landlords and tenants no longer have to worry that their power will be cut off manually by the Power Company's task force when post paid bills are past due since they can be paid in advance under the Prepaid billing system.

Pre-paid meters have proven revolutionary in ensuring bill accuracy. They have solved the problem of lack of readings, wrong readings taken and irregular readings that was being experienced by postpaid meters. This has reduced the number of complaints that the customer service department has had to deal with. The fact that clients can purchase the amount of electricity they need means there is no excess electricity in supply and that they do not have to depend on other people to read their meters. This is especially because meter readers were prone to making mistakes and were too few in number to serve the entire customer's on the Kenya Power and Lighting register. Some places were too far to reach or generally inaccessible which hindered taking records for bill control. However pre-paid meters have overcome these challenges. As part its recommendation, the research noted that there was need for consumers to embraces the prepaid meters. It ensures that the consumer pays only for energy consumed and not the estimated bill in post paid (Ogujor&Otasowie, 2010).

The meter reading system has proven efficient in customer bill control. The few complaints are proof that customer satisfaction is definitely being achieved (Bleuel, 1990, pp.49-52). The transparency of the meters has encouraged the customers to be confident in the suppliers and therefore invest more and more in the product. Customers feel more in control of the finances spent on electricity. Customer satisfaction is embraced when the client is given control of the product that they are investing in.

2.6 Customer satisfaction

Customer satisfaction thus can be defined as the extent to which a product's perceived performance matches a buyer's expectations. Kotler (2006) argues that customer satisfaction depends on the product's perceived performance relative to a buyer's expectations. If the product or service performance falls short of expectations, the customer is dissatisfied. On the other hand, if performance matches expectation, the customer is satisfied. If performance exceeds expectations, the customer is highly satisfied thus this is referred to as customer delight (Kotler, 2006).

According to Alam (2012) several factors affect the perception customers have of prepaid meters acceptance, non-acceptance and level of satisfaction. These factors include cost of prepaid electricity, fair treatment to customers , their accessibility, safety, access to the prepaid units tokens or vouchers where needed, and the ability of uploading it to meters, ensuring there is no power downtime. Reliability of prepaid meters guarantee that the units loaded would be equal to what is consumed and there will be no pilferage. User friendliness of prepaid meters and ease in loading the meters at any variant of environment influences the level of customer satisfaction.

According to Oh (1999) customers would also prefer the assurance availability of meter installation and repair technicians to repair faults of prepaid meters who would offer technical support to assist in time of need .There is an increasing tendency to view satisfying customer as going beyond providing just a technically superior product or service, i.e., defect reduction and continuous improvement programs. Quality is also as such defined by the customer's perception, not by the service provider. However, it should also be born in mind that even if

the first person who is considered as a customer is the buyer (end user), there are several other people who need to be considered as customer for the reason that their involvement in the production and distribution of the service or product, or project (LR Ireland, 1992, 123).

Many researchers agree that there is a positive correlation between quality and customer satisfaction. Durability of prepaid meters Guarantee on how long the meter last before replacement and or repairs; This results to satisfied customers who are bound to come back if they were impressed by the product and service the first time round, In fact they are bound to spread the word round by telling their friends and relatives about the particular product or service that impressed them, thus realization of accumulation of many customers and in the long run customer loyalty (Kotler, 2006).

For this reason, more organizations are spending more resources to nurture and sustain customer loyalty by increasing their number of satisfied customers. James Lynch (1995) says, whether or not they remain, your customers depend on your effectiveness in combating the major threat to business success-consumer promiscuity. This is not a matter of morals but of common sense. If customers are not satisfied, they will find another place that will satisfy their needs, and what satisfies a customer is quality products and services.

Customer satisfaction emanate from positioning of a company when customers perceive Guarantee that their expectations would be met or exceeded by the product or service. "Satisfaction" itself can refer to a number of different facets in the relationship with a customer (Oh, 1999). Accessing to prepaid vending points and the units in multiples that a consumer needs leads quality service that satisfies the customer as every organization must realize that of all economic activities, consumer spending is by far the most dominant contributor to economic growth (Fornell et al., 2010). Accordingly, it is critical for marketers

to try to find out in advance what their customers' expectations are, because a failure to meet or exceed these expectations could lead to dissatisfaction and defection (Chezy and Itamar, 2007). Baker (2002) suggests that sellers must seek to establish the precise nature of their intended customers' needs so that they can devise products and services which will match the needs as closely as possible and to enable them communicate this information effectively to their intended audience through the internet. He argues that stimulus is needed to make a buyer aware of a need and so initiate consideration of possible means of satisfying that need.

However, according to Ogujor and Otasowie, (2010) the introduction of the prepaid meter increases the revenue collection; it reduces revenue generation because it is reliability based. This means that the consumers were now careful with the way they used (consumed) electricity. As part its recommendation, the research noted that there was need for consumers to embraces the prepaid meters. It ensures that the consumer pays only for energy consumed and not the estimated bill in post paid .Center for Promoting Ideas, USA www.aijcrnet.com91 While in other countries the objectives for prepaid electric billing system were to increase access to electric energy by low income households and to boost revenue collection, the same may not be said of Kenya Power Company. But even with countries where the introduction of prepaid electric billing had clear objectives, it has never been established whether such objectives have ever been achieved, and if not why. The continued use of postpaid electric meters in countries like South Africa two and a half decades after the introduction of postpaid meters may point to possible challenges in the adoption of prepaid meters.

For technology-empowered customers has led to many utilities today designating a Chief Customer Officer to handle customer care. This is based on today's service-focused electric

4 where every utility understands that affordability, reliability, and options are key ingredients for a satisfied customer.

Customer satisfaction thus can be defined as the extent to which a product's perceived performance matches a buyer's expectations. Kotler (2006) argues that customer satisfaction depends on the product's perceived performance relative to a buyer's expectations. If the product or service performance falls short of expectations, the customer is dissatisfied. On the other hand, if performance matches expectation, the customer is satisfied. If performance exceeds expectations, the customer is highly satisfied thus this is referred to as customer delight (Kotler, 2006).

Many researchers agree that there is a positive correlation between quality and customer satisfaction. Satisfied customers are bound to come back if they were impressed by the product and service the first time round, In fact they are bound to spread the word round by telling their friends and relatives about the particular product or service that impressed them, thus realization of accumulation of many customers and in the long run customer loyalty (Kotler, 2006).

For this reason, more organizations are spending more resources to nurture and sustain customer loyalty by increasing their number of satisfied customers. James Lynch (1995) says, whether or not they remain, your customers depend on your effectiveness in combating the major threat to business success-consumer promiscuity. This is not a matter of morals but of common sense. If customers are not satisfied, they will find another place that will satisfy their needs, and what satisfies a customer is quality products and services.

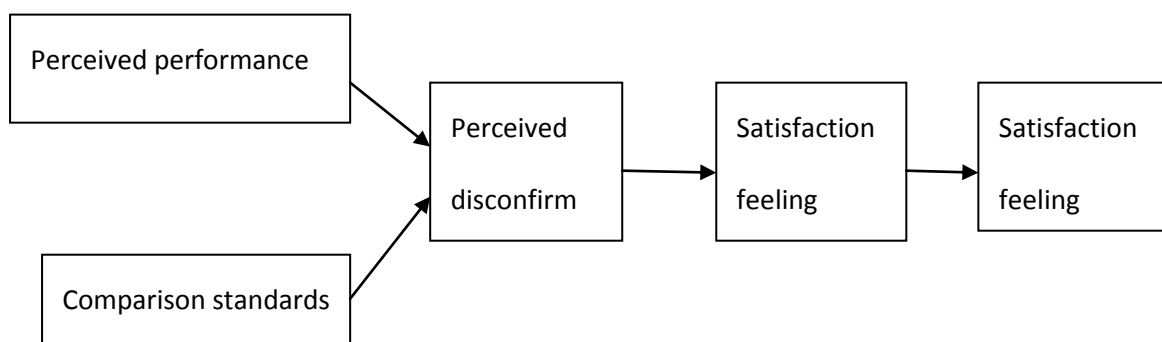
2.7 Theoretical Framework.

Theories have been used in the study of the influence of the adoption of prepaid electricity on the level of customer satisfaction in Kenya.

2.7.1 Customer Satisfaction Model (CSM)

Customer satisfaction is an internationally recognized need. That said, it is very difficult to measure and interpret. Companies usually use surveys to evaluate customer satisfaction periodically. The customer satisfaction model is a macro level framework that links two Extended P's i.e. people and performance (Kessler, 2003). It reflects on the effect of the traditional P's i.e. product, price, place and promotion. CSM focuses on accumulating satisfied and Profitable customers into a substantial share of the target market, meeting and even exceeding Customer's expectations and getting better deals from suppliers and spreading fixed costs over a Broad volume base.

Figure 1: Customer Satisfaction Model



2.7.2 American Customer Satisfaction Index (ACSI)

The American Customer Satisfaction Index (ACSI) offers a reliable set of metrics and Benchmarking standards to measure utility customer satisfaction. It is produced by the American

Customer Satisfaction Index, a private company based in Ann Arbor, Michigan. It attempts to Quantify the financial output from improving customer satisfaction. However, some factors Affecting customer satisfaction may be beyond the company's control e.g. fluctuating fuel prices and government levies. The ACSI uses customer reviews as the input to a multi-equation model developed at the University Of Michigan School Of Business it combines customer satisfaction within a series of cause-and-effect relationships.

Customer expectations are a measure of the customer's anticipation of the product (Xueming and Bhattacharya, 2006). They represent both the before and after experience. Perceived quality is a measure of the customer's evaluation of the product after recent purchase. It is measured by the degree to which the product meets the customer's needs and reliability. Perceived value is a measure of quality of the product relative to price paid. This is often referred to as value for money. Customer complaints are determined by the percentage of customers who report to the company their dissatisfaction with the product. Customer loyalty refers to the Customer's likelihood to purchase the product again from the same company (Fornell and Claes, 2006).

Expected by the customer for example when Kenya Power, in the recent past, gave out energy saving bulbs for free to its customers. Such attributes are often unspoken. The one dimension equality results in satisfaction when fulfilled and dissatisfied when not fulfilled. Such attribute are spoken of for example a company advertising that it will sell two products

for the price of one. Customers will thus be dissatisfied if they do not get this value on the shelves. Quality is often over-looked often when it is fulfilled but if it is not present the customer is disappointed. The customer views it as a basic quality. For example selling bread that is stale. The indifferent aspect is neither good nor bad and leads to neither satisfaction nor dissatisfaction. The reverse quality shows that not all customers are alike.

2.7.3 The Contrast Theory

According to this theory, 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 favorably or unfavorably 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) In terms of the above restaurant situation, the consumer might say that the Restaurant was one of the worst he or she had ever been and the food was unfit for human consumption, etc. If the Contrast theory were applied to a consumption context, then the poor performance would be worse than simply poor, and good performance would be better than a rating of good would suggest (Oliver, 1997).

Theories have been applied and tested in laboratory settings where the customer satisfaction was tightly controlled, situation specific and individually focused. For instance, researchers

investigated the ability of these theories in predicting customer satisfaction with a pen (Cardozo, 1965), a re-type tape recorder (Olshavsky & Miller, 1972), ball-point pen (Anderson, 1973), and a coffee brand (Olson & Dover, 1975). Thus, it is curious whether hypotheses held by these theories could be accepted or rejected when applied in a field survey research study of hospitality and tourism services (Oh & Parks, 1997). It is, for instance, not clear whether all purchase decisions in tourism and hospitality services result in dissonance.

2.8 Conceptual Framework.

In this study, the level customer satisfactions are the dependent variable while the independent variables are: reliable supply, accessible supply, customer consumption control and accurate bills are reflected as below.

Independent Variables

Dependent Variables

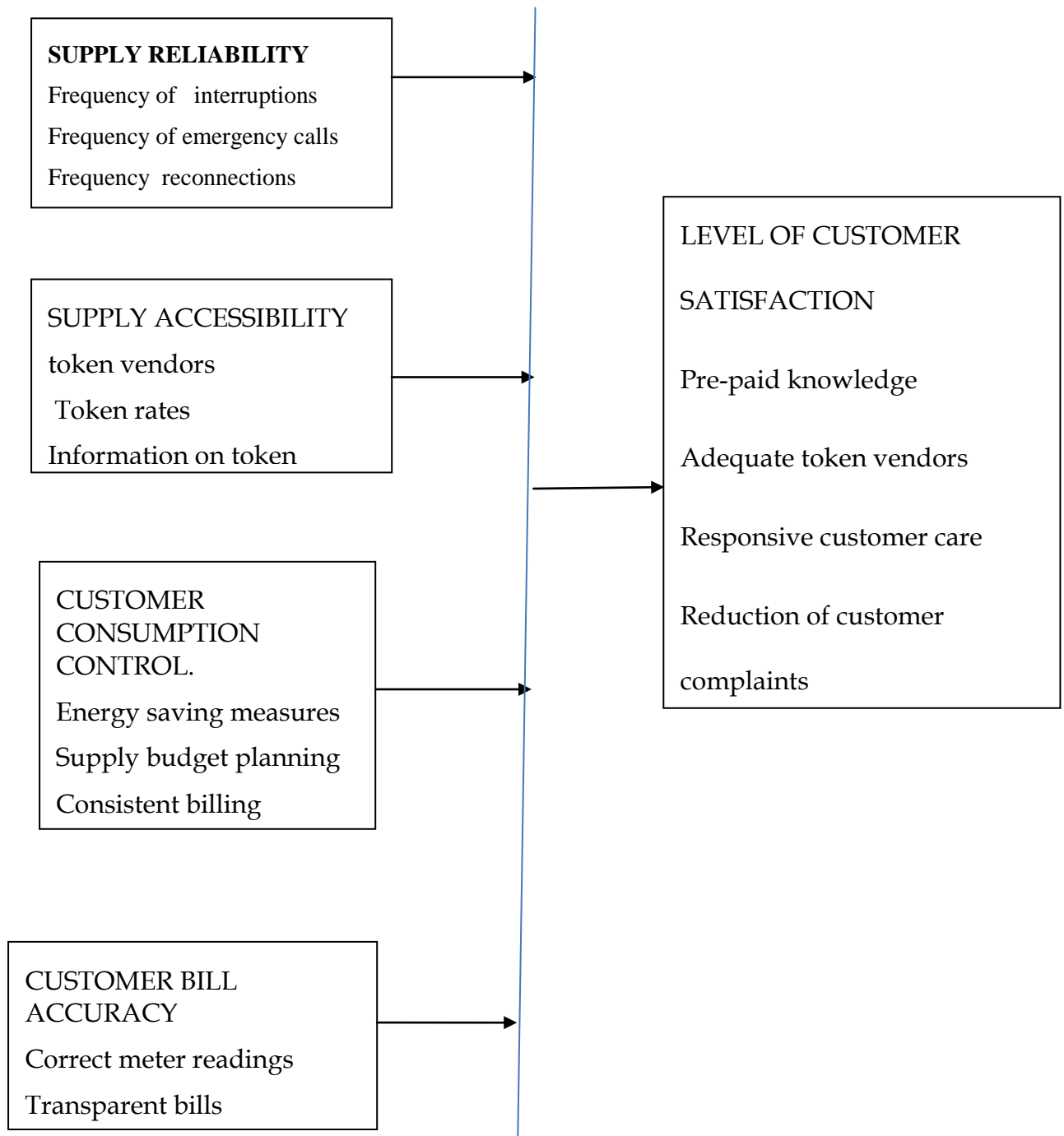


Fig. 2: Conceptual framework

The conceptual frame work illustrates how reliable supply resulting from adoption of prepaid electricity meters has influences the level customer satisfaction. The above condition is met

when the service provider is able to meet or exceed the promised service product accurately and dependably as per the end users expectations .Accessibility of supply as provided by the adoption of prepaid electricity meters enhances the level of customer satisfaction as they provide consumers flexibility in the timing of their electricity expenditures while also guaranteeing that utilities are paid for the electricity they supply.

Customer power control as guaranteed by the adoption of prepaid electricity meters will greatly influence the level of customer satisfaction as customer satisfaction is embraced when the client is given control of the product that they are investing in. The role of accurate bills as provided by the adoption of smart meters is important in influencing the level of customer satisfaction. Customers expect to access electricity and pay at the end of the month after receiving the bill. Wrong billing, lack of bill or delayed bills create anxiety in customers' mind and affects the company's positioning.

The study is likely to be faced by the following limitations. Some respondents may expect financial benefits by their contribution to the study. Others may express unwillingness to respond to the questionnaire. To overcome this problem the researcher will endeavor to explain the importance of the researching increasing knowledge towards reducing the challenges related with related to use of prepaid electricity meters.

CHAPTER THREE

RESEARCH METHODOLOGY.

3.1 Introduction.

This chapter presents the research design which was used, target population for the study and the sample size that was used. It also explains the data collection procedure, analysis and Research instruments the study was adopted. It also focused on validity and reliability of instruments and ethical issues.

3.2 Research Design.

This researcher used a post- facto descriptive survey design as the data was concerned with the respondents who had already have interacted with prepaid electricity meters.. The post – facto descriptive survey highlights an accurate depiction of the respondents’ behaviours, opinions, beliefs and abilities (Cooper and Schindler, 2008). This type of survey alleviates bias during data collection. According to Mugenda and Mugenda (2004), the purpose of descriptive research is to determine and report the way things are and it helps in establishing the current status of the population under study. This type of survey was used in preliminary studies to enable researchers gather information interprets data for clarification. The most common method of qualitative data collection is interviews but other forms such as group discussions, observation and reflection of field notes are often used. This design was chosen because it ensures reliability of data.

3.3 Target Population

The target population for this study consisted of Kenya Power customers residing in Makongeni state, Kiandutu estate and Thika town. Residents live in urban areas and have therefore adopted the prepaid electricity meters, these customers are of different Social, and economic backgrounds hence the sample will be heterogeneous. The staff in Kenya Power were chosen because they routinely receive and address customer complaints and hence have invaluable statistics (Kenya Power annual report, 2013). In addition these urban residents were often more educated hence know what to expect from the service provider (Kenya Population and Housing census, 2009). The target population for this study consists of 196 customers. Customers which is drawn from the three areas namely; Makongeni, Kiandutu and Thika town as illustrated in distributed in table 3.1:

Table 3.1 Target Population

Category	Target population
Makongeni	43
Kiandutu	85
Thika town	68
Total	196

3.4 Sampling Size and Sample Technique

The sample size was chosen using the Krejcie and Morgan Table (1970) which determines

Sample size based on the formulae:

$$S = \frac{X^2 - N P (1-P)}{d^2 (N-1) + X^2 P (1-P)}$$

Where

S = required sample size

X² = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841)

N = the population size

P = the population proportion (assumed to be .50 since this would provide the maximum sample size)

d = the degree of accuracy expressed as a proportion (.50)

Based on the target population therefore, the sample size was 129 extracted from the Krejcie and Morgan Table (1970) for a population size of 196.

From a sampling size of 129, therefore the specific category of participants were sampled on the basis of the sample size using the formula:

category number of participants x sample size

Total Population

The sample size from the various categories of participants was therefore given in table 3.2:

Table 3.2 Sample population

Category	Target population	Sample size
Makongeni	43	28
Kiandutu	85	45
Thika town	68	56
Total	196	196

3.5 Research Instruments

Quantitative data was collected from the Kenya Power internal customers through administering a questionnaire while qualitative data was collected through application of an interview guide and the use of observation guide to compliment the quantitative data. The questionnaire was used for collecting primary quantitative data. Additionally, the questionnaires were used for the following reasons: its potentials in reaching out to a large number of respondents within a short time; able to give the respondents adequate time to respond to the items; offers a sense of security (confidentiality) to the respondent; and it is objective method since no bias resulting from the personal characteristics as in an interview (Owens, 2002).

The questionnaire was divided into six sections. The first section will collect background information for the respondent and the target fire station, the second section of the questionnaire sought to establish the influence of reliable supply on the level of customer satisfaction, third section determined the influence of supply accessibility on the level

customer satisfaction, fourth section was to find out the influence of accuracy in customer bills on the level customer, the fifth section investigated the effect of customer consumption control on the level customer satisfaction while section six of the questionnaire sought the opinion of the respondent on the status of customer satisfaction. In the third section of the questionnaire, McClosky and Mueller Satisfaction scale is incorporated to measure the customer satisfaction and prepaid electricity meter adoption.

The observation guide listed items within the prepaid electricity meters adoption that influence the level of customer satisfaction. while the interview guide listed a set of questions to guide the researcher in interviewing the selected sample population on factors that influenced the level of customer satisfaction in Kenya Power, Kiambu Sub County.

3.6 Piloting the Instruments.

A pilot study was conducted in Gitambaya, Mugutha and Mebley Starehe in Ruiru Sub County as they exhibit the same characteristics as the Sub County under study. This was to enable the researcher to pretest all the research instruments. All the research assistants were to familiarize themselves with the research tools during the pilot study. Data obtained from the pilot study was then used to moderate the final research instruments.

3.7 Validity of the Instruments

According to Mugenda and Mugenda (1999) validity is the accuracy and meaningfulness of inferences which are based on research results. Kothari (2004) explains that content validity is the extent to which a measuring instrument provides adequate coverage of the topic of the study. Validity implies how well the measuring instruments used in the research fulfill the

purpose of the study. The purpose of this study was to establish the influence of prepaid electricity meters on power supply reliability ,power supply accessibility ,customer power consumption control and customer electricity bill on the level of customer satisfaction. Creswell (2007) suggests one to use of different methods to evaluate validity. He advises the researcher to use at least two strategies. The two strategies adopted in this study are peer review debriefing and the rich and thick description. The former strategy involves having a well-versed supervisor to monitor the research and help analyze the results .The latter strategy involves collecting personal information about participants to determine the validity of their responses. Construct validity was also used by engaging a panel of experts -project supervisor and department lecturers who were familiar with the topic.

3.8 Reliability of the Instruments

Mugenda and Mugenda (1999) define reliability as a measure of the degree to which a research instrument yields consistent results after repeated tests when administered a number of times. It also refers to the situation where the results of a study can be reproduced under similar methodology (Joppe, 2000). The researcher measured the questionnaire, interview guide and the observation guide as the instrument of study in the Kenya Power customer in Thika Sub County.

The test – retest method was employed to established the reliability of the questionnaires. According to Gregory (1992) the technique involves administering the same instrument twice to the same group of subjects. The questionnaire was administered to the Kenya Power customers in Ruiru Sub County selected for the pilot study within an interval of one week and Pearson Product Moment Correlation Coefficient (r) was calculated for each questionnaire. Mugenda and Mugenda (1999) notes that acceptable reliability coefficient ranges from 0.6 in

social sciences. Therefore the researcher established the correlation coefficient (r) for the questionnaire to determine its reliability.

3.9 Data Collection Procedure

The researcher sought authority from Kenya Power to conduct the research. The County Engineer was briefed about the purpose of the study and his authority sought before commencing the study. The Kenya Power Departmental heads were involved to introduce the researcher and the research assistants to the other members of staff as they are well known and since they are familiar with the working environment, they will lead the research team in the various blocks while moving around. Two research assistants will be recruited and trained to assist in data collection of the study.

3.10 Data Analyzing is Technique

The qualitative data was coded and doubled entered into a computer database designed using Ms – Access application. Data cleaning and validation was performed in order to achieve a clean dataset was exported into a statistical package for social sciences (SPSSver.21). A clean dataset was stored in a computer hard drive for analysis. Backup files were stored in CDs and external hard disks regularly to avoid any loss or tampering. Data analysis was conducted using SPSS statistical software. Exploratory data techniques was used at the initial stage of analysis to uncover the structure of data and identify outliers or unusually entered values. Quantitative data was coded and process using SPSS version 22.0.

Descriptive statistics such as frequencies was used to summarize, organize and simplify the data to be collected. Quantitative data was presented using frequency tables and graphs. The

qualitative data generated from interview and observation guide was categorized in Themes in accordance with research objectives and reported in narrative form along with Quantitative presentation and was used to reinforce the quantitative data.

3.11 Ethical Consideration

Clearance for the research was sort from the Kenya Power human resource department and. The target customers were given adequate explanation on the purpose of the research and was given time to seek clarifications and/or ask questions before being recruited into the study. Informed consent was sort from the sample population before conducting interviews. Participation was fully voluntary and confidentiality was maintained at all levels during the study.

Table 3.3: Operationalisation of variables

Objectives	Variables	Indicators	Measurement scale	Tools of analysis
To establish the level of customer satisfaction	Customer satisfaction	Prepaid awareness. ·Number of customers using prepaid meters Effective customer care	Nominal	Questionnaire
To determine the influence of reliable supply on the level of customer satisfaction .	Reliable power supply	· Frequency of Blackouts availability token vendors of complaints Average connection time Responsiveness to calls by customer	Nominal	Questionnaire
To establish the influence of supply accessibility on the level customer satisfaction	·Power accessibility accuracy in customer electricity bills Customer power consumption control	<ul style="list-style-type: none"> • Token vendors proximity Prepaid meters awareness Availability of Prepaid meter provider.	Nominal	Questionnaire
To establish the influence of accuracy in customer bills on the level customer satisfaction .	Customer power consumption control	Clear billing procedure. Correct meter readings	Nominal	Questionnaire Questionnaire
To determine the effect of customer consumption control on the level customer satisfaction.		Energy saving measures. Consistent billing Clear power expenditure	Nominal	

CHAPTER FOUR
DATA ANALYSIS, PRESENTATION AND INTERPRETATION OF FINDINGS

4.1 Introduction

The chapter presents the data analysis, presentation and interpretation of the findings on the influence of prepaid electricity meters adoption on the level of customer satisfaction. The data collected was collated and reports produced in form of descriptive tables.

4.2 Questionnaire Return Rate

Out of the one hundred and twenty nine eight (129) questionnaires administered, ninety one (91) constituting 71% response rates were collected. Out of this 25 customers were from Makongeni Estate, 36 from Kindutu. According to American Association for Public Opinion Research (AAPOR, 2008), the 71% which is a high response rate from a random sample of 91 is considered preferable to a low response rate from sample above 91.

The response rate from the various strata is given in the table 4.1:

4.3. General Characteristics.

4.3.1 Gender of Respondents

Table 4.1 shows the distribution according to gender of the respondents.

Table 4.1: Sex of the respondents

Gender	Frequency	Percentage
Male	44	47.3
Female	47	52.7
Total	91	100.0

In all, 47.3% of the respondents were male and 52.7% female, indicating that gender distribution in respondents was relatively the same.

Table 4.3.2 Distribution of Age of Respondents

Table 4.2 shows the distribution of respondents according to their age.

Table 4.2 Age of Respondents

Age	Frequency	Percentage
25 – 35	21	23.1
36 – 46	46	50.5
46 – 55	16	17.5
55 and above	8	8.9
Total	91	100.0

The highest percentage of respondents (50.1%) was between age 36 – 46 while the lowest was 55 and above years and stood at 8.9%. This is an indication that the older youth have embraced the prepaid electricity meters more than the younger youth and the elderly. There is also an indication that as the older youth (46 – 55 years) nears the old age, their number decreases at 17.5%.

4.3.3 Level of Education of Respondents

Table 4.3 shows the level of education that the fire station staff had attained before employed at their current workstation.

Table 4.3: Distribution of level of education of respondents

Level of education	Frequency	Percentage
Primary	17	18.6
Secondary	34	37.3
College	31	34.1
University	15	16.4

Total	91	100.0
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Table of 4.3 presents levels of education of Kenya power customers the various estates in Thika Sub county. It indicates that 100% of the prepaid electricity meters users had formal education. Almost all the fire station staffs in Thika Sub County are literate. The data from this table reveals that one has to be literate (100%) to be able to use the smart meter need to have hence need to have some formal education.

4.3.4 Distribution of respondents in various residential areas

Table 4.4 shows the distribution of respondents in various residential areas

Table 4.4 Respondents residential areas.

Residential area	Frequency	Percentage
Makongeni	30	33.0
Kiandutu	29	31.9
Thika town	32	35.1
Total	91	100.0

Table of 4.4 presents Distribution of respondents in various residential areas in Thika Sub county. It indicates that 35.1% of the prepaid electricity meters users reside in Thika town,33.0% in Makongeni while 35.1% are based in Kiandutu estates.

4.3.5 Different types of customers in Thika sub county

Table4.5 shows the distribution of different types of customers in Thika sub county.

Table 4.5 Types of customers in Thika sub county

Types of customers	Makongeni	Kiandutu	Thika town	Total	%
Domestic	12	10	8	30	33.0
Small non-domestic	8	8	6	20	21.1
Commercial	10	11	18	39	42.9
	30	29	32	91	100

According to the above table 33% of the users of prepaid electricity meters were domestic customers, 21.1 % were small non-commercial and 42.9% were commercial customers.

4.3.6 Table 4.6 shows the distribution of level of experience of respondents with prepaid electricity meters.

Table 4.6 Respondents level of experience.

Level of experience	Makongeni	Kiandutu	Thika Town	TOTAL	%
Less than 3 months	3	2	3	8	8.8
3 – 6 months	2	6	3	11	12.1
6-9 months	6	4	6	16	17.6
9-12 months	4	5	8	17	18.7

More than 1 year	15	12	12	39	42.8
TOTAL	30	29	32	91	100

Out of the 91 respondents who returned the questionnaire, 39 which represents 42.8.% had experience of more than 1 year with those with less 3 months standing at 8.8%. The respondents also reported 17.6% for those with experience between 6 and 9 months and 18.7 % for those with between 9 and 12 months experience. From the data it can be noted that the Thika town customers have adequate experience with prepaid electricity meters as it was among the areas where the project was first piloted according to a Kenya Power, 2011

4.4. Influence of reliable power supply on the level of customer satisfaction.

The respondents responses on the influence of reliable power supply on the level of customer satisfaction was also analyzed by considering various factors.

4.4. Table 4.7 shows the rate of power interruption as an influence of customer satisfaction on adoption prepaid electricity meters..

Table 4.7 Rate of payment power interruptions

Rate of power interruptions	Frequency	Percentage
Rarely	56	61.5
Frequently	17	18.7
Never	14	15.4
I do not Know	4	4.4
Total	101	100.0

As shown in table 4.7, majority 61.5 percent of the sampled users of prepaid electricity meters confirmed that they rarely experience payment related power outages in their premises ,18.7 percent of reported frequent outages,15.4 percent of never experience any payment related outages while 4.4 percent of of the respondents are not sure about their experience with prepaid electricity meters in Thika County.

4.4.2. Average power restoration time after loading the credit to the smart meter.

Power reliability in relation with prepaid electricity meters was also analyzed by focusing on the average restoration time once the credit is loaded.

4.4.3 Table 4.7 shows different average power restoration time after loading the credit to the smart meter

Table .4.7 Average power restoration time

Duration	Frequency	Percentage
0 – 2 seconds	61	67.0
10– 30 minutes	18	19.8
1 – 2 hours	9	9.9
1- 3 days	3	3.2
Total	91	100.0

The highest percentage of respondents (67.0%) had their power restored after a duration between 0-2 second while 3.2 % their power restored in a duration between 1-3 days after loading the credit to the smart meter .19.8% get their power restored after a period of 10 -30 minutes while 9.9% reported power restoration after 1-2hours . This is an indication hat although there is a majority (67%) whose power is restored almost instantly after loading

their credit into the smart meter, there is a large minority (33%) whose restoration ranges from 10 minutes to 3 days .

4.5. Power accessibility and Level of customer satisfaction.

Power accessibility in relation with prepaid electricity meters was also analyzed by focusing on the respondents opinion on the availability of token vendors (shops)average in their areas of residents

4.5.1 Table 4.8 shows the different respondents opinion in relation to token vendors availability.

Table 4.8 availability of token vendors

Vendors availability	Frequency	Percentage
Agree	79	86.8
Neutral	6	6.6
Disagree	6	6.6
Total	91	100.0

The highest percentage of respondents (86.8%) agreed that token vendors are available 6.6.% were neutral while another 6.6% disagreed that token vendors are available.

4.5.2 Prepaid electricity meter loading information

Accessibility of loading information was also analyzed and the customers responded as below .

Table 4.9 Respondents opinion on the availability of prepaid electricity meters information.

Availability of prepaid electricity meter information	Frequency	Percentage
Agree	65	71.4
Neutral	16	17.6
Disagree	10	11
Total	91	100.0

Table 4.9 indicates that (71.4%) of the respondents agree that prepaid electricity meters information is available ,17.6% of the respondents were neutral while 11% disagreed that the prepaid electricity meters information is available. The 17.6% that is neutral and the 11% that disagree shows there is a large(49.5%) proportion of respondent that has no access to prepaid meters information.

4.5.3 Updating of credit loaded via m-pesa

Updating of credit loaded via m-pesa/airtel was also analyzed and the customers responded as below .

Table 4.10 respondents opinion on time taken to update electricity credit by m-pesa/airtel l money .

Loaded credit via m-pesa/airtel is instantly updated in the prepaid	Frequency	Percentage
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meter		
Agree	62	70.6
Neutral	7	7.8
Disagree	22	24.2
Total	91	100.0

Table 4.10 indicates that (70.6%) of the respondents agree that credit updating in the smart meter when loaded via m-pesa/airtel was instant 7.8% of the respondents were neutral while 24.8% disagreed that updating instantly in the smart meter when loaded via m-pesa/airtel .

4.5.4 Customer care handling of prepaid electricity meters complaints.

Updating of credit load via m-pesa was also analyzed and the customers responded as below .

Table 4.11 Handling of prepaid meters complaints by Kenya Power customer care

Kenya Power customer handles prepaid electricity meter complaints competently	Frequency	Percentage
Agree	67	73.6
Neutral	12	13.1
Disagree	12	13.4
Total	91	100.0

Table 4.11 indicates that (73.6%) of the respondents agree that prepaid electricity meters related complaints are handled competently by Kenya power customer care ,13.1% of the respondents were neutral while 13.4% disagreed that prepaid electricity meters related complaints are handled competently by Kenya power customer care.

4.6.Customer power consumption control and customer satisfaction.

4.6.1 Monitoring power consumption budget

Table 4.12 shows the opinion of respondents in the adoption of prepaid electricity meters in relation to controlling their power consumption budget.

Table 4.12: Monitoring power consumption budget

CUSTOMER CONSUMPTION CONTROL	Makongeni	Kiandutu	Thika Town	TOTAL	%
Yes	19	13	25	57	62.6
No	9	12	4	25	27.6
Idont know	2	4	3	9	8.8
TOTAL	30	29	32	91	100

There was a large proportion of respondents who seemed to be assisted by the prepaid meters to monitor their power consumption budget was at 62.6% while 27.6% of the respondents were not. This could perhaps be due to lack of proper understanding of the prepaid electricity meters billing system.

4.6. 2 Distribution of measures taken by respondents to reduce wasteful use of electricity.

An analyses of the various measures taken by different respondents to control their energy was done and recorded as shown by table 4.13

Table 4.13: Monitoring power consumption budget

Methods of Monitoring power consumption budget	Makongeni	Kiandutu	Thika Town	TOTAL	%
Energy saving bulbs	25	12	26	63	69.2
Switching off	3	14	4	21	23.1
Using solar	2	3	2	7	7.7
TOTAL	30	29	32	91	100

Table 4.13 shows that (69.2%) use energy saving bulb to reduce unnecessary and wasteful use of electricity,23.1 % switch off their supply when not in use to reduce wastage while 7.7 % use solar especially during the day as an alternative source of energy.

4.6.3 Knowledge of monthly expenditure power consumption.

Table 4.14 shows the distribution of the respondents' knowledge of their monthly expenditure on power consumption.

Table 4.14: Knowledge of monthly expenditure power consumption

CUSTOMER	Makongeni	Kiandutu	Thika	TOTAL	%
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CONSUMPTION CONTOL	Town				
Yes	23	18	28	69	75.8
No	7	11	4	21	23.2
TOTAL	30	29	32	91	100

Table 4.14 shows that a large majority of the respondents 75.8% was conversant with their monthly expenditure on power consumption, while large minority of 23.2% did not know their monthly budget on power consumption.

4.7 Customer bill accuracy and customer satisfaction.

4.7.1 Influence of accurate bills.

Table 4.15 shows the distribution of the respondents' opinion in relation to influence of accurate billing resulting from the prepaid electricity meters adoption.

Table 4.15: Influence of accurate bills

Influence of accurate bills	Makongeni	Kiandutu	Thika Town	TOTAL	%
Actual units charges	24	16	25	65	71.4
Affordable tokens	2	8	5	15	16.5
Clear billed period	4	5	2	11	12.1
TOTAL	30	29	32	91	100

Table 4.15 shows that a large majority (71.4%) preferred prepaid electricity meters as the bill is based on actual units consumed.16.5% liked it as tokens are available in affordable quantities while 12.1% preferred them for showing the period charged clearly.

4. 7.2 Influence of meter reading on the level customer satisfaction.

Table 4.16 shows the distribution of the respondents’ opinion in relation to influence of meter reading on the level of customer satisfaction

Table 4.16: Influence of meter reading on the level of customer satisfaction

Influence of meter reading on the level of customer satisfaction	Makongeni	Kiandutu	Thika Town	TOTAL	%
Correct meter reading	23	19	26	68	74.7
Efficient meters	4	6	4	14	15.4
Advance bill payment	3	4	2	9	9.9
TOTAL	30	29	32	91	100

Table 4.16 shows that a large majority (74.7%) confirmed that they happy as the bill is based on correct reading,15.4% said that efficient meters contribute greatly in their satisfaction while 9.9% % agreed that advance bill payment increase their satisfaction in their adoption of prepaid electricity meters .

4. 7.3 Billing challenges affecting the level customer satisfaction.

Table 4.17 shows the distribution of the respondents' opinion in relation to influence of meter reading on the level of customer satisfaction

Table 4.17: Challenges affecting the level customer satisfaction.

Billing challenges affecting the level customer satisfaction	Makongeni	Kiandutu	Thika Town	TOTAL	%
Irregular billing	25	21	27	73	80.3
Credit loading	4	7	3	14	15.3
payment statements	1	1	2	4	4.4
TOTAL	30	29	32	91	100

According to American Association for Public Opinion Research (AAPOR, 2008), the 93.5% which is a high response rate from a random sample of 108 is considered preferable to a low response rate from sample above 108.

4. 8.Prepaid electricity meter information to customers and the level customer satisfaction.

4.8.1: Influence of meter reading on the level of customer satisfaction.

Table 4.18 shows the distribution of the respondents' opinion in relation to the methods that should be used to give prepaid electricity meter information to the users.

Table 4.18: Influence of meter reading on the level of customer satisfaction

Prepaid electricity meter information to customers and the level customer satisfaction	Makongeni	Kiandutu	Thika Town	TOTAL	%
Kenya power staff	26	24	25	75	82.4
Prepaid manuals	1	1	2	4	4.4
Media education	1	4	2	7	7.7
Token vendors	2	3	0	5	5.5
TOTAL	30	32	29	91	100

Table 4.18 shows that a large majority at (82.4%) confirmed that they would prefer getting prepaid information from Kenya Power staff, small minority of 4.4% would prefer prepaid user guide manuals, 7.7% from the media and 5.5% preferred information from token vendors.

4.9 Influence of Prepaid Electricity Meters on Customer Satisfaction

Generally the influence prepaid electricity meters on customer satisfaction was also analyzed and the results were as below

4.9.1 Prepaid Electricity Meters and Customer Satisfaction

Table 4.19 shows the distribution of the respondents' opinion in relation to the level of customer satisfaction after the adoption of prepaid electricity meters .

Table 4.19: Prepaid meter and Level of customer satisfaction

Prepaid meter and Level of customer	Kiandutu	Thika Town	TOTAL	%
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satisfaction					
Improving	19	21	23	63	69.3
Average	10	8	7	25	27.4
Declining	1	2	0	3	3.3
TOTAL	30	31	30	91	100

Table 4.18 shows that (69.3%) said that the level of customer service is improving as a result of prepaid electricity meter adoption ,27.4% said the level of customer service remains the same while 3.3% said the level of satisfaction has actually declined.

4.9.2 Distribution of respondents complains in a Month

Table 4.20 shows the monthly distribution of of respondents complaints to Kenya power customer care.

Table 4.20. Distribution of respondents complaints in a month.

Number of complaints made Kenya power in a month.	Makongeni	Kiandutu	Thika Town	TOTAL	%
Less than 2 times	23	22	24	69	75.8
3 – 6 times	3	4	5	12	13.2
6-9 times	2	2	2	6	6.6

More than 10times	2	1	1	4	4.4
TOTAL	30	29	32	91	100

Out of the 91 respondents who returned the questionnaire, 69 which represents 75.8.% had complained to Kenya power customer care less than 2 times .13.2% made between 3 to 6 complaints, 6.6 had made 6-9 complaints and 4.4% had made complained more than 10 times to Kenya power customer care.

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary of the findings, discussion, conclusions reached and recommendations following the objective of the study which sought to evaluate the influence of prepaid electricity meters adoption on the level of customer satisfaction in Thika sub county, Kenya. Prepaid electricity meters adoption has been taunted as a major contributor to quality customer satisfaction in Kenya Power. This study set to investigate the influence of power reliability, power accessibility, customer consumption control and customer bill accuracy on the level of customer satisfaction.

5.2 Summary of the findings

Relying on the responses given by the respondents, the researcher came up with findings which were used to make conclusions and give recommendations. The main findings as based on the result on data analysis in chapter four are given in Table 5.1 below:

Table 5.1: Summary of findings

Demographic Characteristics	Finding
Gender	<ul style="list-style-type: none"> In all, 47.3% of the respondents were male and 52.7% female, indicating that the number of female respondents were slightly higher than the male counterpart
Age of the respondents	<ul style="list-style-type: none"> The highest percentage of respondents (50.1%) was between age 36 – 46 while the lowest was 55 and above years and stood at 8.9%. This indicates that the users in the age bracket 36-46 have highly embraced use of prepared electricity meters as compared to the younger youth and the elderly. There is also an indication that as the older youth (46 – 55 years) nears the old age, their number decreases at 17.5%.
Level of education	<p>There is an indication that 100% of the prepaid electricity meters users in Thika sub county had formal education. The data reveals that one has to be literate (100%) to be able to use the smart meter hence need be literate. The findings revealed that the users of prepared electricity meters had undergone formal education with majority at 34% having undergone secondary education level. The data reveals that one has to be literate to be able to use the smart meter hence the literacy levels exhibited.</p>
Distribution of respondents residential areas	<ul style="list-style-type: none"> The analyses reveals that a majority 35.1% of the prepaid electricity meters users reside in

	Thika town, a large number 33.0% in Makongeni while a few 35.1% are based in Kiandutu estates
	•
Objectives	Findings
5. To determine the influence of power supply reliability of on the level of customer satisfaction in Thika sub county.	<ul style="list-style-type: none"> • A majority at 61.5 % of the sampled users of prepaid electricity meters confirmed that they rarely experience payment related power outages in their premises while 18.7% percent of reported frequent payment related outages. This indicates that there is a reasonable minority of respondents experiencing payment related problems with the smart meters. • A majority at 67% confirmed that their power is restored almost instantly after loading their credit into the smart meter, while a large minority at (33%) claimed it take 10 to minutes to 3 day for same to be restored. This is an indication that there are problems in the payment system that hinder the smart meter from updating the payment instantly.
6. To establish the influence of power supply accessibility on the level customer satisfaction in Thika sub county.	<ul style="list-style-type: none"> • Although the highest percentage of respondents at (86.8%) agreed that token vendors are available there was a 6.6% that disagreed that token vendors are available and this indicates that there is still need for more pay points. • Of the 91 respondents contacted at (71.4%) of them agreed that prepaid electricity meters information is available while 17.6% were neutral and 11% disagreed. This shows that

	<p>there is a large at (49.5%) proportion of respondent that has no access to prepaid meters information.</p> <ul style="list-style-type: none"> • A greater majority of (70.6%) of the respondents agreed that credit updated instantly in the smart meter when loaded via m-pesa/airtel was 7.8% of the respondents were neutral while 24.8% disagreed that was updated instantly in the smart meter when loaded via m-pesa/airtel .The 24.8% disagreeing lot therefore indicates there are delays with the services offered by the two service providers. • A majority (73.6%) of the respondents agree that prepaid electricity meters related complaints are handled competently by Kenya power customer care, 13.1% of the respondents were neutral while 13.4% disagreed that prepaid electricity meters related complaints are handled competently by Kenya power customer care. A combination of the neutral and the disagreeing groups which totals to 26.5% reveals that handling of customer prepaid electricity meters complaints by Kenya power is not satisfactory.
<p>7. To determine the influence of customer consumption control on the level customer satisfaction in Thika sub</p>	<ul style="list-style-type: none"> • A large proportion 62.6% of respondents seemed to be assisted by the prepaid meters to monitor their power consumption budget while 27.6% of the respondents were not. This could perhaps be due to lack of proper

<p>county.</p> <p>8. To establish the influence of</p>	<p>understanding of the prepaid electricity meters billing system.</p> <ul style="list-style-type: none">• Most respondents 69.2% confirmed that they have been using energy saving bulb69.6% and to avoid wasteful use of electricity while a minority 23.1 % switch off when not in use for efficiency .Hence the two methods seem favorable to smart meter users• A majority of the respondents 75.8% was conversant with their monthly expenditure on power consumption, while large minority of 23.2% did not know their monthly budget on power consumption. This large minority that does not understand the monthly expenditure on power shows they are not conversant with the prepaid billing system.• A large majority (71.4%) preferred prepaid electricity meters as the bill is based on actual units consumed.16.5% liked it as tokens are available in affordable quantities while 12.1% preferred them for showing the period charged
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<p>accuracy in customer electricity bills on the level customer satisfaction in Thika sub county.</p>	<p>clearly.</p> <ul style="list-style-type: none"> • A majority (74.7%) confirmed that they happy with prepaid electricity meters as the bill is based on correct reading,15.4% said that efficient meters contribute greatly in their satisfaction while 9.9% % agreed that advance bill payment increase their satisfaction in their adoption of prepaid electricity meters .The minority who do not believe in the accuracy of bills do still trust the prepaid meters. • (80.3%) confirmed that irregular billing is a challenge affecting the level of customer satisfaction. 15.3% stated that credit loading to the smart meter while 4.4% said that getting a payment statement on the prepaid system is difficult. This is an indication that there is a big gap relating to the respondents knowledge of the smart meter usage. <p>Alarge majority (82.4%) suggested that Kenya power staff should educate customer about prepaid meters 4.4% suggested that information through prepaid manuals is acceptable.7.7% was for media education while 5.5% preferred token vendors as a source of information. This indicates that there use prepaid user guide manual as source information to customers is inadequate.</p>
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<p>Prepaid meter and Level of customer satisfaction</p>	<ul style="list-style-type: none"> • A majority 69.3%) said that the level of customer service is improving as a result of prepaid electricity meter adoption . This indicates that the large minority of 30% who do not believe that prepaid meters hasenhanced customer satisfaction have a problem and they are dissatisfied. • Out of the 91 respondents who responded 75.8.% had complained to Kenya power customer care less that2 times. While the rest 24.2% have called Kenya power customer care between 3 to 10 times .This suggest inadequate the handling of the respondents problems.
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5.3. Discussions of the findings

This section gives a detailed discussion of the findings from this study.

At the same time their level of education is largely from primary and university level where the 18.7% with primary level is limiting the level of communication channels used to inform the customers on prepaid meters. The findings also reflect that most of the prepaid users commercial customers based in Thika town.It was therefore recommended that Kenya power should have a proper customer care desk dedicated for prepaid meter queries

5.3.1Influence of prepaid electricity meter.

The findings of this study showed power supply reliability resulting from adoption of prepaid meters influences the level of customer satisfaction.Most customers when they purchase electricity expect it to be reliable, without unexpected interruptions and durable . Jun and

CAI,(2001) suggested that for the prepaid electricity meter to be reliable it must be tangible, able to give prompt service, trustworthy and the service provider must be competent in advising the customer.

Although a majority 61.5 % of the sampled users of prepaid electricity meters reported they did not experience any payment related problem and that their power was promptly restored once they have made their payment there was significant minority at 18.7% percent of reported frequent payment related outages .In addition they reported that there was delay in power restoration after payment was made. This indicates that there is a reasonable minority of respondents experiencing payment related problems with the smart meters. This is an indication that the prepaid electricity meters payment system has issues that should be addressed for customers to be satisfied.

5.3.2Influence of Prepaid electricity meters power supply accessibility.

Any customer would prefer to purchase electricity at the nearest electricity vendor where this vending of electricity tokens, or vouchers, widens the access points for the provider and creates entrepreneurs and business opportunities. According to the findings of this study a large majority of respondents at 86.8% confirmed that that token vendors and other payment points are available and within their proximity. To some extent the findings concur with Peter and Olson, (2008) that asserted that accessibility of supply refers to creating an easy way for consumers to acquire the product or service that cater for their need. However there were some customers 13.6% who complained that token vendors were not available .Another large minority at 49.5% of respondent said that had no access to prepaid meters information. A greater majority of at70.6% of the respondents agreed that credit was updated instantly in the smart meter when loaded via m-pesa/airtel but a significant minority at 24.8% disagreed on this. We can therefore conclude that there are delays with the services offered by the two service providers .There was a strong feeling that the Kenya power customer care no 59991 is very difficult to go through as most of the time the line is engaged.

5.3.3 Influence of Prepaid electricity meters customer consumption control

Using prepaid service is one option available to consumers that want to better manage their consumption and optimize their budget allocation. The research shows that 62.6% of respondents agreed that the prepaid meters help them to monitor their monthly power consumption budget. This concurs with a study done by Baptista (2013) that noted that pre-paid electricity gives consumers autonomy of electricity use and divisibility of energy purchases and it also encourages savings on electricity consumption where one can choose not to use electricity for the month and in this way minimize his bills. However 27.6% of the respondents complained of variations in units purchased with the same amount of money at different times of the same month. Customer also complained that though energy saving bulbs assisted them to control their bills, they are expensive and hence some 23.1 prefer switching of the power or use solar energy for efficiency. This is a wakeup call to Kenya power as this dissatisfied group of customers are now using competitors product and hence adoption of prepaid meters is not enhancing the level of customer satisfaction.

5.3.4 Influence of Prepaid electricity meters accuracy in customer

It is the joy of every customer to get value for his/her money. **In this study a majority at 74.7%** of said that they happy with prepaid electricity meters as the bill is based on correct reading and actual units consumed in particular period of the month and this concurs with a study done in Nigeria by Ogujor&Otasowie,(2010) ,that concluded that a bill is an itemized list of charges where accurate bills will only be possible if accurate measurements are taken and recorded correctly. However a large minority at 28.5% reported that they preferred the prepaid billing system for other reason like; tokens being available in affordable quantities or for showing the charged period clearly. This group does not know whether the bill is accurate and also they complained one is not able to access the account`s statement in prepaid especially when one is taking over a meter from a previous user .(80.3%) confirmed that irregular billing is a challenge affecting the level of customer satisfaction. 15.3% stated that credit loading to the smart meter while 4.4% said that getting a payment statement on the prepaid system is difficult .To enhance the satisfaction of this group of descanted customers Kenya Power should do more of bill sensitization campaign as this is an indication that there is a big gap relating to the respondents knowledge of the smart meter usage.

5.3.5 Prepaid electricity meters and Customer satisfaction.

According the findings of this study a large majority at 69.3% of customers said that the level of customer care in Kenya power is improving as a result of prepaid electricity meter

adoption .However the respondents reported that this would be better if the organization used its technical staff to sensitize the customers on the use of prepaid meters. This is in line with the research done by Alam (2012) that found out that several factors affect the perception customers have of prepaid meters acceptance, non-acceptance and level of satisfaction. These factors include cost of prepaid electricity, fair treatment to customers , their accessibility, safety, access to the prepaid units tokens or vouchers where needed, and the ability of uploading it to meters, ensuring there is no power downtime. About 30% of the customers complained that the services offered by Kenya power had declined with the introduction of prepaid meters and this concurs with by a study conducted by Chege (2012) that established that there are various complaints from Kenya power customers regarding the prepaid meters. Some of these complaints were that pre-paid meters do not give the consumers a breakdown of their consumption, breeding suspicion that it is expensive. This indicates that the use prepaid user guide manual as source information to customers is inadequate and the company should now train more staff on the prepaid technical knowledge to use them as the main source information to customers.

Although a majority at 75.8.% respondent had complained to Kenya power customer care less than 2 times, There was a significant minority at 24.2% who reported that they contacted Kenya power customer care between 3 to 10 times for issues related with prepaid electricity meter In addition some customers reported that some Kenya Power employee seemed scanty knowledge on prepaid electricity meters. The service provides should therefore train customer service staff on this area as it is negatively impacting on the level of customer satisfaction.

5.4 Conclusions of the study

The following conclusions were made from the findings of this study.

In conclusion, the study found out that power supply reliability, Power accessibility, Customer power consumption control and Customer bill accuracy influence the level of customer satisfaction. However from the demographic characteristics of the study, it is evident that there is indication that the female respondents were slightly more than the male counterparts and the age bracket of users prepaid is mainly between 36-46. This is an indication that the older youth and women have embraced this smart meter more than their older, younger and men counterpart. From the data it can be noted that the Thika town customers have adequate experience with prepaid electricity meters as it was among the areas where the project was first piloted according to Kenya Power Annual Report (2011).

The report findings also showed that power supply reliability influences the level of customer satisfaction. The factors that contribute to power supply reliability are concluded as rate of payment power interruptions, average power restoration time, energy affordability, customer service, better response in case of a problem and efficient handling of prepaid meters complaints among others. These are important in helping the organization to identify the gap between a customer's expectations of a service and the perceptions of the service that is delivered. However the Kenya power should review its customer care system as the study showed that there customer complaints that take long to resolve and customer still have issues in using the smart meter.

Power accessibility Strongly influences the level of in the customer satisfaction which is reflected in the availability of token vendors within the customer proximity, availability of prepaid electricity meters, availability of prepaid electricity meter information to customers, time taken to update electricity credit by m-pesa/airtel. It can be concluded from the findings that the vendor are not well distributed to reach all the customers and that even being provided with the smart meter for interested customers by Kenya power is not easy. The report has also showed that customers are not conversant with the prepaid payment system and this often generate frustrations to the affected customers.

Customer power consumption control influences the level customer satisfaction as indicated by Monitoring power consumption budget, measures taken by respondents to reduce wasteful use of electricity and customer Knowledge of monthly expenditure power consumption The Kenya power customers are drifting to the competitors by alternating electricity with solar and this is attributed to inefficient knowledge in prepaid meters as the unclear billing system makes electricity appear more expensive to the users. There are also irregular charging that makes the customer feel cheated thus make it difficult for the user to plan his/her monthly power

budget. It is evident from the study that the service provider has not used the mass media effectively to sensitize customers more on this technology.

According to this study, accuracy in customer electricity bills has great influence on the level of customer satisfaction as far as the prepaid electricity meter adoption is concerned. This is stipulated in the number of billing complaints raised by the smart meter users, quality of meter reading used to charge the customer and the billing period charged. However there is a clear indication from the many complaints as per the study that customers do not understand how they are billed. Most customers complained being charged irregular units for same amounts of money and this makes the whole billing system very suspicious to the prepaid users.

5.5 Recommendations of the study

Based on the research finding, the researcher recommends that the management in Kenya Power Company re-evaluates its communication techniques as customers are not aware of the company's activities. For instance, some customers are not aware that one can apply for a pre-paid meter free of charge. The researcher suggests that Kenya Power Company enhance reliability of electricity supply by reducing the response time of attending to payment outages. This can be achieved by offering a specialized training the customer service staff. Customers should be involved when the smart meter is being installed their premises for smooth transition of the facility and its information.

Based on the findings, the researcher recommends that Kenya Power Company sensitizing the customers before introducing new products the like prepaid meters to them for this would enhance the level of customer satisfaction. Most of the times the Kenya power teams install the smart meter in the customer's premises without giving further information as to how or where the customer will purchase the next token. Most of the time the Kenya power teams install the smart meter in the customers' premises without giving further information as to how or where the customer will purchase the next token. It is clear that some customers experience delays of up to 3 days after paying via m-pesa, airtel or other agents before the credit is updated to the meter and the company should liaise with the two service providers for quality service as it is a threat to the level of customer satisfaction. The company should decentralize its customer care services to take service closer to the people. This would enhance personalized services especially for prepaid customers as they have no other avenue to interact with the service provider.

In order to ensure that Customer power consumption control influence the level of customer satisfaction, The researcher recommends that the management should embark more

communication channels like the mass media, social media like Twitter and Facebook to advertise new products and create awareness to the in the older youth as majority of the population is between the ages of 36 and 45 years as evident in the research. Specialized prepaid electricity meters trainings should also be offered to front office staff to meet the needs of smart meter users.

The researcher also recommends that the management looks into ways of reducing the cost of Power supply as this is encouraging the customers to switch to alternative sources of energy like solar and this is a draw back to the organizations revenue correction. The study also revealed that the problem of bill accuracy is just misconception and therefore the company should do a strong bill sensitization campaign to create confidence in customers whose little information in the new product is affecting the level of customer satisfaction.

5.6 Suggested area for further research

The study proposes the following areas for further study:

1. An investigation into the factors affecting prepaid electricity meters customer acceptance in Thika sub county, Kenya.
2. The challenges facing power connectivity in Kenya .
3. The contribution of Global partnership on output based aid (GPOBA) on electricity connectivity in Kenya

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APPENDIXES

Appendix 1: questionnaire for the different categories customers .

Instruction:

SECTION I: CUSTOMERS BACKGROUND INFORMATION

1. . State your gender::

Male Female

2. Age in years:

25-35 36 – 45 46 – 55 55 and Above

3. How often do you buy tokens in a month ?

once twice three time 4 and above

4. What is your level of education?

Secondary

College

University

Any Other Specify:

Do you reside in any of the following areas? Kiandutu Makongeni

Thika town

Any Other Specify:

3. For how long have you used pre-paid electricity meters?

1- 3 months

3 – 6 Months

6 -9 Months

9 -12 Months

Any other -----

SECTION II: Reliable supply and the level of customer satisfaction.

7. How often do you experience payment related power outages? *(Multiple answers allowed)*

- Rarely
- Frequently
- Never
- I do not know

8. How long does it take to restore your power supply once you have reloaded the token?

- 1-2 seconds
- 10-30 minutes
- 1-2 hours
- 1-3 days.

9. Do you get instant response when you call Kenya power customer care centre?

- YES
- NO

Explain:

10. In your own opinion, how is supply reliability resulting in the adoption of prepaid electricity meters affecting the level of customer satisfaction?

.....

SECTION III: Access of electricity supply and Level customer satisfaction

(In answering the following questions, indicate your opinion on the influence of the following attributes on level of customer satisfaction)

11. How would you rate the following supply access factors influence on the *level of customer satisfaction*?

	Influence of electricity supply accessibility on the level of customer satisfaction	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
A.	Credit tokens are available in many vending points					
B.	Availability of token loading information					
C.	Loading the credit via m-pesa is not instantly updated in the meter					
D.	Kenya Power staff respond competently to customer complaints					
E.	Tokens are available in reasonable quantity.					
F.	I know where to report when I have problems in loading my token.					
G.	Sometimes the token number is not					

	accepted by my meter.					
H	Power is restored once I load my token.					

SECTION IV: Customer consumption control and customer satisfaction

12. Does prepaid electricity meter assist in monitoring your budget control?

- YES
- NO
- I don't know

13. What are you doing to reduce unnecessary and wasteful use of electricity?

- Using energy saving bulbs.
- By not using electricity for sometime
- Using solar energy
- Using gas
- Any other specifies:

14. After how long do you take your meter records? 1-5 times a month

- 6-10 times a month

Over 10 times a month

Anytime

15. Do you know your monthly expenditure on power consumption?

YES

NO

If yes, explain why the company should consider using prepaid instead of postpaid meters.....

16. Which are your sources of information in prepaid electricity meters?

Kenya power Customer care

Prepaid meter user guide.

Internet

Any other specifies:

SECTION V: Customer bill accuracy and customer satisfaction

17. How does accurate billing influence the level of customer satisfaction?

One can buy the token anytime of the month.

Obtained from accurate measurements that is taken and recorded correctly.

The bill is estimated.

18. In what way does meter reading influence the level of customer satisfaction?

When the readings and billings system is transparent.

When bills are paid in advance.

Increased customer complains

Enhanced corruption.

19. In your opinion what are the billing challenges arising from the adoption of use of prepaid electricity meters that influences the of level customer satisfaction?

The loading system

The wrong readings Irregular billing.

One cannot get a payment statement

. Paying to wrong accounts.

Any other specifies:

20. In your opinion what measures should Kenya power take to keep the users more informed on prepaid electricity meters to enhance the level of customer satisfaction?

Read the Prepaid user .guide

Educate token vendors.

Educate customers via media.

Educate staff any other specifies:

SECTION VI: Level of customer satisfaction.

21. What is the Level of customer satisfaction?

Improving

Average

Declining

22. How often do you raise prepaid electricity meter related complaints to Kenya Power customer care?

1-2 times a month

3-6 times a month

7-9 times a month

More than 10 time a month

Other specifies:

23. Outline the various reasons as to why you make the above complaints to Kenya Power customer care.

24. In your opinion why is prepaid electricity meter more convenient to use that the postpaid electricity meter

25. How has challenges associated with the adoption of use of prepaid electricity meters influenced the level of customer satisfaction?

26. What changes would you recommend for further the implementation of the prepaidelectricity meter project to improve the level of customer satisfaction?.....

Appendix 2: interview guide for the different categories customers.

Instruction:

SECTION I: CUSTOMERS BACKGROUND INFORMATION

1. How old are you?
2. What is your level of education?
3. Where do you reside?
4. For how long have you used prepaid electricity meters?
5. How often do you buy tokens in a month.

SECTION II : Reliable supply and the level of customer satisfaction.

6. How often do you experience payment related power outages?
7. How long does it take to restore your power supply once you have reloaded the token?
8. Do you get instant response when you call Kenya power customer care centre?
9. In your own opinion, how is supply reliability resulting in the adoption of prepaid electricity meters affecting the level of customer satisfaction?

SECTION III: Access of electricity supply and Level customer satisfaction

(Seek the opinion of the interviewee on the following employment satisfaction attributes)

10. How would you rate the following supply accessibility factors influence on the level of customer satisfaction?
 - a) Credit tokens are available in many vending points.
 - b) Availability of token loading information.
 - c) Relationship with fellow workers at the fire station influences fire service delivery

- d) Buying token from m-pesa.
- e) Kenya Power staff responds competently to customer complaints
- f) I know where to report if code is not accepted by my meter
- g) Tokens are available in reasonable quantity.
- h) Loading the token is possible when Kenya Power network system is down.
- i) Power is restored immediately after loading the token.

Answer the following questions by stating your opinion.

- 11. Are there enough token vendors in proximity to where you live or conduct business?
- 12. Is your credit updated instantly in your meter once you pay through m-pesa ?
- 13. Do Kenya Power staffs respond to you competently when you lodge a complaint?
- 14. Are tokens available in reasonable quantities? Do you know where to raise your complaints when you have meter related issues?

SECTION IV : customer consumption control and customer satisfaction

- 15. Does prepaid electricity meter assist in monitoring your budget control?
- 16. What are you doing to reduce unnecessary and wasteful use of electricity.
- 17. After how long do you take your meter records? Do you know your monthly expenditure on power consumption?

If yes, explain why the company should consider using prepaid instead of postpaid meters. :
- 18. Which are your sources of information in prepaid electricity meters?

SECTION V: Customer bill accuracy and customer satisfaction

19. How does accurate billing influence the level of customer satisfaction?
20. In what way does meter reading influence the level of customer satisfaction?
21. In your opinion what are the billing challenges arising from the adoption of use of prepaid electricity meters that influences the of level customer satisfaction?
22. In your opinion what measures should Kenya power take to keep the customers more informed on prepaid electricity meters to enhance the level of customer satisfaction?

SECTION VI: Level of customer satisfaction.

23. What do you think is the Level of customer satisfaction?
24. How often do you raise prepaid electricity meter related complaints to Kenya Power customer care?
25. Outline the various reasons as to why you make the above complaints to Kenya Power customer care?
26. In your opinion why is prepaid electricity meter more convenient to use that the postpaid electricity meter
27. How has challenges associated with the adoption of use of prepaid electricity meters influenced the level of customer satisfaction
28. What changes would you recommend for further the implementation of the prepaid electricity meter project to improve the level of customer satisfaction?

