

**INFLUENCE OF PREPAYMENT METERING ON
CONSUMER BEHAVIOR AMONG HOUSEHOLDS OF
HURUMA ESTATE IN UASIN GISHU COUNTY**

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**A RESEARCH PROPOSAL REPORT SUBMITTED IN PARTIAL FULFILLMENT
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DECLARATION

This proposal is my original work and has not been presented to any other examination body.

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DEDICATION

To my loving wife Pollymercy Wamuhu Mundia, beloved Son Paul Maina Mundia and daughter Jane Gathoni Mundia, for encouragement and continuous Support while I am undertaking the course.

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Lastly but most importantly, I thank the Almighty God for His care and providence. Indeed his grace will be sufficient throughout the course.

May God Bless you all.

ABSTRACT

In developing countries, energy providers 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. Additionally, electricity consumers face problems poor reliability of electricity supply. The main objective of the study will be to assess influence of prepayment metering on consumer behavior among household of Huruma Estate in UasinGishu County. The study will be guided by the following objectives; to establish how reliability of prepaid meters influence consumer behavior, to ascertain how flexibility of prepaid meters influence consumer behavior, to ascertain how convenience of prepaid meters influence consumer behavior and to determine how security of prepaid meters influence consumer behavior. The study will use diffusion innovation theory and technology acceptance model. The study will employ descriptive survey research design. The research will target a population of 325 domestic, corporate and also industrial users of prepaid electricity meters in Huruma Estate, UasinGishu County. Stratification and random sampling will select a sample size indicated 179. Self-administered questionnaire will be used in this study to collect data. The variables will be tested for reliability by computing the Crobach alpha statistical tests. Data collected will be analyzed by use of descriptive statistical such as means, standard deviations and inferential methods using Pearson moments of correlation and multiple regression analysis.

TABLE OF CONTENTS

DECLARATION	i
DEDICATION	ii
ACKNOWLEDGEMENT	iii
ABSTRACT	iv
TABLE OF CONTENTS	v
LIST OF TABLES	viii
LIST OF FIGURES	ix
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background to the Study	1
1.2 Statement of the Problem	4
1.3 Purpose of the Study	5
1.4 Research Objectives	5
1.5 Research Questions	5
1.6 Significance of the Study	6
1.7 Limitations of the study.....	6
1.8 Assumptions of the study	6
CHAPTER TWO	8
LITERATURE REVIEW	8
2.0 Introduction	8
2.1 The Concept of prepaid metering.....	8
2.2 Reliability of Prepaid Meters and Consumer Behavior	9
2.4 Convenience of Prepaid Meters and Consumer Behavior	11
2.5 Security of Prepaid Meters and Consumer Behavior	14
2.6 Theoretical Framework	16
2.7 Conceptual Framework	17
CHAPTER THREE	19
RESEARCH METHODOLOGY	19
3.1 Introduction	19
3.2 Research Design.....	19
3.3 Target Population	19
3.4 Sampling Size and Sampling Procedure	20
3.4.1 Sampling Size.....	20
3.4.2 Sampling Procedure	20
3.5 Data Collection Instruments.....	21
3.5.1 Piloting of Instruments	22
3.5.2 Validity of Instruments.....	22
3.5.3 Reliability of Instruments.....	23
3.6 Data Collection Procedures	24

3.7	Data Analysis and Presentation.....	24
3.8	Ethical considerations	25
CHAPTER FOUR.....		27
DATA ANALYSIS, PRESENTATION, DISCUSSION AND INTERPRETATION		27
4.2	Questionnaire response rate	27
4.3	Demographic information	27
4.4	Gender of the respondents.....	27
4.5	Age of the respondents.....	27
4.6	Level of education.....	28
4.7	Average monthly consumption	29
4.8	Period of usage.....	29
4.9	Reliability of prepaid metering	30
4.10	Payment of electricity bills.....	30
4.11	Ease of usage.....	31
4.12	Installation.....	31
4.13	Payment of electricity.....	32
4.14	Electricity consumption.....	33
4.15	Flexibility of prepaid meters	34
4.16	Feedback and usage.....	34
4.17	Faster reconnection and use of electricity	35
4.18	Payment modes and use of electricity	35
4.19	Convenience of prepaid metering	36
4.20	Affordability.....	36
4.21	Maintenance costs	37
4.22	Availability of prepaid metering	37
4.23	4.5.4 Installation costs.....	38
4.6	Security of prepaid metering.....	39
4.24	4.6.1 Prepaid meters security	39
4.25	4.6.2 Consumer safety	40
4.26	4.6.3 Prepaid metering payments	41
4.27	4.6.4 Power of purchase	41
CHAPTER FIVE		42
SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS, AND RECOMMENDATIONS.....		42
5.1	Introduction.....	42
5.2	Summary of findings.....	42
5.2.1	To establish how reliability of prepaid meters influence consumer behavior	43
5.2.2	Flexibility of Prepaid Meters and Consumer Behavior	43
5.2.3	Convenience of Prepaid Meters and Consumer Behavior	43
5.2.4	Security of Prepaid Meters and Consumer Behavior.....	44

5.3 Conclusion of the study	44
5.4 Suggestions for further studies	45
REFERENCES.....	46
APPENDIX 1: QUESTIONNAIRE.....	50
APPENDIX 2: PROPOSED BUDGET	54
APPENDIX 3: RESEARCH SCHEDULE	55

LIST OF TABLES

Table 3.1: Sample Size	21
Table 3.2 Operationalization of variables	26
Table 4.1: Gender of respondents	27
Table 4.2: Age of respondents	28
Table 4.3 Level of education	28
Table 4.4: Average monthly consumption	29
Table 4.6: Payment of electricity bills	30
Table 4.7: it was easier to use prepaid meters in recharging the tokens	31
Table 4.8: Prepaid meter installation	32
Table 4.9: Payment of electricity	32
Table 4.10: Electricity consumption	33
Table 4.12: Faster reconnection	35
Table 4.14: Affordability	36
Table 4.15: Maintenance of prepaid metering	37
Table 4.17: Installation costs	38
Table 4.18: Prepaid meter security	39
Table 4.19: Consumer safety	40
Table 4.20: Prepaid metering payments	41
Table 4.20: Power of purchase	42

LIST OF FIGURES

Figure 2.1	Conceptual Framework.....	18
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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

In the energy sector, prepaid metering system is a new billing methodology that includes a superior electronic customer accounts management system. It integrates metering equipment and smart card technology. It not only provides a power utility with a substantial saving both in manpower and money, but also with a new payment option for the customers. It is reported to reduce operational cost with paperless electricity consumption behavior system and can even replace any electromechanical meter in the market (Hangzhou Pax Electronic Technology, 2012).

Over the year a bigger number of consumers has resorted to the uptake of prepaid metering globally. In the United Kingdom the uptake of the prepaid metering can be traced back over a decade with a population of between 15% to 20% accounting for the total adoption of the prepaid metering (Chartwell, 2003). In its neighboring country of North Ireland the uptake of prepaid metering is estimated to be around 25% of the total population while in the Arizona area of the United States it is estimated that the salt project has enabled more than 6% of the residents to adopt the prepaid metering system (Energywatch, 2005).

In his study, Chartwell (2003), argued that since the introduction of the prepaid metering services in the United Kingdom, there was an increment in revenue collection which resulted to reduction of overheads thus maximization of profits by the electricity supplying firms. Crossing the borders into North Ireland, it was noted that the consumption of those clients who were involved with the prepaid metering had reduced by up to 4.9% compared

to their counterparts who used the previous system. Various studies have showed that majority of OECD countries with special mention of India, prepaid metering had taken root has early as the 1990s (Estacheet al., 2000) and achieved its popularity in the Great Britain as argued by (Waddamset al., 1997) within the same periods.

Globally, many countries have been trying to adopt the prepaid metering with the United States of America being in the forefront of the uptake. Some decades ago, the management of electricity was been done by usage of different systems and technologies that were in favor of that specific period (Daniel, 2011). Over the years, the changes in technological advancement has necessitated the adoption of new technologies which has found to be necessary in archiving organization objectives (Federal Energy Regulatory Commission, 2011). According to various reports, it can be noted that the usage of prepaid metering has brought with it main advantages that include reduction of credits, improved cash flows and improved debt collection and scrapping of reconnection fees amongst other charges that were previously being advanced to the consumer

In China, Houseman (2005) outlines some social benefits relating to personal time scheduling and states that advanced meters allow more customized billing cycles that can include synchronizing payments with pay-days. This innovation has general relevance and indicates diversity of operation as well as customization of service. Potentially, consumers, through a combination of increased environmental awareness and the ease of changing supplier, could switch suppliers because of their production methods (renewable or non-renewable) and level of carbon emissions (Owen and Ward 2006). In Africa 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 (Tewari and Shah, 2003).

With majority of electricity consumers moving towards the prepaid metering with countries like Ghana, Botswana with Kenya inclusive being in the forefront, majority of power supplying firms have humongous debts especially from consumers resulting in minimum collection of revenue resulting in poor provision of services due to poor infrastructure. Due to failure by some consumers not paying the over due bills, most of the companies resorted to collection agencies popular referred to as RCM (Revenue Collection Management) to recover the huge sums owed to them (Annon, 2001). However, those companies did not receive the desired results thus introduced digital prepaid meter to minimize the losses that they were experiencing.

In Kenya, 123,000 prepaid meters had been installed throughout the country with a majority of them in Nairobi by June 30, 2009. The project however faced a lot of challenges and opposition from majority of consumers who viewed it as a scheme of unfairly charging them for power usage. This was due to the fact that very little efforts had gone to familiarizing the consumers of the benefits associated with prepaid metering, poor organization by the power companies and issuance of defective meters. The installation project was slowed down to address pertinent issues like inadequate consumer education, logistics, and faulty meters. However, the expectations have not come true for all customers of the Kenya power company. There have been complaints by some customers that this is

not as efficient. It seems that faulty gadgets, poor consumer knowledge on how to use the new technology and confusing billings, have irked some consumers (Kenya Federation of Consumers, 2012). A check across several households using pre-paid meter elicited mixed reactions among consumers, while some testify that the pre-paid meters save electricity and costs, others remain unsatisfied, citing various concerns. However, in a bid to counter the ignorance surrounding the pre-pay meters, Kenya Power has embarked on an intensive customer education about tariffs, particularly the domestic tariff. (East Africa Reporter, 2012).

1.2 Statement of the Problem

According to Kenya Power Annual Report (2009), postpaid system which has been in use since inception of Kenya Power Ltd had been blamed for not returning account deposits, consumers not being in control of their consumption, unpleasant disconnection, reconnection fees due to unmade payments, corruption during disconnection and reconnection of power and estimated bills, especially due to premise access problems. In addition energy providers 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.

Kenya Power Limited adopted prepaid metering to improve efficiency in electricity consumption behavior. This has not been achieved since electricity consumption behavior related to prepaid system has not increased significantly (Kenya Power Monthly Report, 2013). Additionally, electricity consumers face problems of being billed for bills that have already been paid. Those that are against the use of the prepaid meters argue that their adoption is expensive and risky for low income earners, as the insecurity and volatility of

their income may force them to make little use of the service or ultimately bring about involuntary self-disconnection (Ariel and Luciana, 2008). Most consumers especially those living in compound houses where meter sharing is common have been complaining that since they began using the prepaid meters, they spend more than usual. They feel that the prepaid meters run fast and that they spend as twice as much as what they used to spend on the post-paid meter. Since inception of prepaid billing system project in 2009, it is worth assessing the effects it has had on the consumers' consumption behavior. However, very few studies have attempted to address the link between prepayment metering on changing consumption behavior. This study therefore will seek to establish the effect of prepaid meters adoption on electricity consumption behavior.

1.3 Purpose of the Study

The main purpose of the study will be to assess influence of prepayment metering on consumer behavior among households of Huruma Estate in Uasin Gishu County.

1.4 Research Objectives

1. To establish how reliability of prepaid meters influence consumer behavior
2. To ascertain how flexibility of prepaid meters influence consumer behavior
3. To ascertain how convenience of prepaid meters influence consumer behavior
4. To determine how security of prepaid meters influence consumer behavior

1.5 Research Questions

The study seeks to answer the following questions:

1. How does reliability of prepaid meters influence consumer behavior?
2. How does flexibility of prepaid meters influence consumer behavior?

3. How does convenience of prepaid meters influence consumer behavior?
4. How does security of prepaid meters influence consumer behavior?

1.6 Significance of the Study

The expansion of electricity supply to achieve long term objective of hundred per cent nationwide electricity supply coverage is a function of the ability of Kenya power limited revenue collection capacity; this study provides a great insight to the management of Kenya power limited on how best to implement the adoption of prepaid meters through enhancing customer service, elimination of estimated bills, and disconnection. The study benefits the company on the importance of prepaid systems to enhance public service delivery. Scholar and researchers will positively adopt the use of prepaid meters and also add on existing literature on revenue collection practice and company policy formulation.

1.7 Limitations of the study

Some respondents might refuse to answer questions others may give exaggerated information. Researcher will convince them with a promise to keep all information confidential. The other limitation of the study will be dealing will with the busy households, some of whom might not have time to fill questionnaires. It will be difficult to obtain sufficient information from such people. However, most of the households' heads who will be busy or could not fill the questionnaire; they will request their representatives to fill the questionnaires on their behalf. The study will be carried from May to July 2016.

1.8 Assumptions of the study

The study will be based on the following assumptions:

- i. That the respondents will provide true and honest responses to the items in the research instruments.
- ii. That there will be updated records on prepaid meters.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

In this chapter, a literature review relevant to the study was drawn from local and international sources and presented in relation to the research objectives.

2.1 The Concept of prepaid metering

The paid ahead of time metering framework comprises of prepayment meter, IC card, and energy deal the board framework. Prepaid meter records dynamic energy Customers as indicated by their interest, and acquisition of a specific amount of energy from the neighborhood electric force organization. The board framework with compassionately man-machine interface is anything but difficult to gather, break down and store information. IC card is the medium between prepaid meter and energy deal the board framework.

Reception of prepaid meters by Pax power manual (2007) clarifies some rules for new client, the meter subtleties and client subtleties are gone into the ace terminal situated at the local office. After enlistment at provincial office, client needs to buy credit at any business terminal situated at the approved charging station. The credit worth will be put away into the card, in the wake of embeddings the card into the meter, all data including credit and boundaries will be naturally stacked (Selby, 2009). If there should arise an occurrence of each credit exchange, the meter composes status data, accessible credit, power utilization information, and so on to the shrewd card (Szmigin, 2003). With the IC card to buy credit next time, the business terminal will procure all data and move it to the

provincial information base, the worker is the "center" of income assortment where all the back-end applications are overseen and clients' data is ceaselessly refreshed.

2.2 Reliability of Prepaid Meters and Consumer Behavior

Wodon, (2000) contends that prepaid meter clients will in general have more adaptability than postpaid meter clients this is on the grounds that for the previous, there would be no requirement for the Power organization authorities to visit a home or office just to record the last meter perusing before giving a bill for the month. The adaptability of the prepaid meters permits purchasers to change their utilization designs in a manner that is good for them. Selby, (2009) declares that there are no humiliating manual separations for prepaid meter clients in light of their temperament of being responsive along these lines adjusting purchaser utilization in a positive way. With the Prepaid meter charging framework, Landlords and inhabitants at this point don't need to stress that their capacity will be cut of physically by the Power Company's team when postpaid bills are past due since they can be paid ahead of time under the Prepaid charging framework (Darby, 2006).

The idea of adaptability of prepaid meters helps in decreasing in Bribery. The prepaid charging framework likewise has decreased the rate of pay off among Electricity shoppers and the Power organization team. On occasion, supporters who have not covered tabs will in general pay off the Power organization staff with the expectation of complimentary power and this doesn't enable the ability to organization produce the pay because of it (Foster, 2000). Donkor, (2009) states that since individuals presently don't need to pay a level rate on power administration and because of the way that the power organization needs to gather its income as at when due, the Prepaid charging framework encourages the two players to accomplish this as it permits the endorsers of just compensation for what

they use and for the Power provider to get paid for the administration it really delivered. The prepaid charging framework permits individuals to purchase the power they can bear ahead of time and use it as indicated by how they need just as have command over it by basically turning off the lights and gadgets (DTI, 2006).

Ariel and Luciana (2009) have shown that there are two primary ascribes of prepayment meters that recognize them from the Standard credit meters. Furthermore, one of these remarkable credits is that clients are needed to pay for power before utilization can happen. The other is that the prepayment framework all the more effectively includes clients in their power supplies. These credits of prepayment meters have significant ramifications for power private clients. They have shown that the prepayment meters give more noteworthy adaptability to clients than standard credit meters, by permitting clients to decide both the recurrence and measure of every installment.

Another adaptability advantage prepaid meter charging has over postpaid meters is that not normal for the last which charges clients on a variable rate, the previous doesn't generally charge clients dependent on utilization. Now and again, Power authorities don't check meter readings thus may utilize an expected charging framework which regularly includes giving a level month to month charge for all clients on the stage. This is ideal for private companies and industrial facilities who simply need to pay a level rate independent of their creation or business exercises which ordinarily require a great deal of intensity (ERA, 2008). In the event that those organizations were utilizing a prepaid meter and their exercises increment, it would likewise prompt an expansion in power charges yet a postpaid meter charging that utilizes a level assessed month to month charge would be

more useful to them. This is significant on the grounds that it assists purchasers with knowing the specific pace of their power utilization (Doe, 2009).

2.4 Convenience of Prepaid Meters and Consumer Behavior

The American Heritage Dictionary (1992) characterizes accommodation (thing) as "the nature of being reasonable to one's solace, purposes, or needs" and as "something that builds solace or spares work." Convenient (adj.) has been characterized as "simple to reach; open" and "fit or positive for one's solace, reason, or needs". In the context of a help experience, comfort has been portrayed regarding way of life, not voyaging, individual wellbeing, and not pausing (Lichtenstein and Williamson, 2006). Comfort may impact utilization conduct and administration accommodation is likewise observed as instrumental when customers decide the decision of an assistance and assess an association's administration execution (Mohr and Bitner, 2005). In the shopper administrations research zone, comfort has progressively been perceived as a remarkable item characteristic and as a reason for settling on buy choices (Voli, 2008).

Luciana (2009) has shown that there are two primary ascribes of prepayment meters that recognize them from the Standard credit meters. What's more, one of these special credits is that clients are needed to pay for power before utilization can happen in this way ending up being more advantageous subsequently customers can deal with their utilization (Ariel and Luciana, 2009). The other is that the prepayment framework all the more advantageously includes clients in their power supplies (Mburu, 2014). These ascribes of prepayment meters have significant ramifications for power private clients.

They have shown that the prepayment meters give more noteworthy comfort to clients than standard credit meters, by permitting clients to decide both the recurrence and measure of every installment (Tewari and Shar, 2003; Kinyoda ,2013). The more successive installment of power bills is additionally prone to help clients in changing power utilization conduct. The expanded capacity for clients to screen and change their utilization, and dodge enormous bills by paying more successive more modest sums are two of the key client advantages of prepayment meters (Ariel, 2009). The prepaid meters were accepted that would spare power and be more helpful for customers

So as to keep on staying associated with the power flexibly, clients need to keep prepayment meters in credit or, at any rate not exhaust the measure of credit accordingly more comfort on the utilization of power among customers (Ogujor and Otasowie, 2010). Other than this, prepayment meter clients are at freedom to pay for power now and again and in measures based on their personal preference. This furnishes clients with adaptability to pay in a way that suits them instead of being secured in an installment cycle set by the retailer (Estacheet al., 2000). The prerequisite to pay for power in front of utilization may likewise set up a more grounded and prompter connection between choices about power utilization and the subsequent recurrence and measure of prepayment (Hangzhou Pax Electronic Technology, 2012). This may help the client in dealing with their family spending plan, and could likewise go about as a driver for customers to lessen their power bills by restricting power utilization.

Roth, (2002) affirms that dissimilar to different clients, prepayment meter clients would be consequently separated on the expiry of any crisis acknowledge though a client for a standard credit meter that falls into installment back payments could haggle with their retailer for extra an ideal opportunity to pay. A worry with the utilization of prepayment meters is that their utilization will prompt an expanded pace of separation among monetarily weak clients (Hernando and Nieto, 2007; Chung and Paynter, 2002). Separations can have huge money related, wellbeing and security, and passionate and mental ramifications for clients. On account of power, the unmistakable component of the prepayment framework is the inversion of the traditional commercialization framework: while in the last shoppers hold an utilization credit since they take care of for their energy tabs intermittently and after utilization, in the prepayment framework such credit isn't accessible on the grounds that the buy and installment of energy are made before utilization.

Liao and Cheung (2002) experimentally recognize comfort as a critical quality property in the apparent handiness of paid ahead of time metering, which emphatically impacts customers' ability to utilize paid ahead of time metering. Wan, Luk and Chow (2005) affirm that accommodation significantly affects clients' appropriation of paid ahead of time metering in Hong Kong. Lee et al. (2005) discover that purchasers see accommodation to be a significant determinant of expectation to embrace paid ahead of time metering administrations. Moreover, Yu and Lo (2007) find that apparent comfort fundamentally impacts purchasers' genuine conduct to paid ahead of time metering.

2.5 Security of Prepaid Meters and Consumer Behavior

Selby (2009) has shown that the prepayment metering framework prompts an expansion in customer prosperity by inciting a more prominent feeling of moral duty regarding overseeing power supplies consequently ending up being more valid. Prepayment meters may conceivably diminish social impacts of prepayment meters by lessening the span of detachments and by causing a view of separation being under the individual control of the power client as opposed to something that is forced upon the client by the power retailer.

Mintah, (2008) declares that there may likewise be positive social impacts emerging through expanding individual responsibility and obligation regarding the utilization of, and installment for, power administrations for the benefit of the power client because of more noteworthy measure of validity gave by the prepaid meters. It is anyway impractical to evaluate gauge of the effect of these social advantages.

Then again it is contended that the prepaid meters have the propensity of diminishing buyer prosperity from a net increment in money related expenses related with power utilization because of their degree of validity. Prepayment meter clients bring about intrigue costs since they are needed to pay for power before it is burned-through instead of financially past due concerning clients with standard credit meters and in light of the fact that they are not have the option to aggregate awful obligations on their power charges. Prepayment meter clients are probably going to bring about extra expenses related with more continuous separations from their power gracefully (Luciana, 2009).

As indicated by Accra, (2004) the prepaid meter would should be credited with assets of the endorser before he/she will approach power. A postpaid meter then again permits the

supporter of begin utilizing power from the very beginning even without paying for it so it's somewhat more credit amicable and greater validity subsequently helps in observing utilization levels.

A Prepaid meter framework permits the endorser of just compensation for what he can manage ahead of time as it's a touch more spending neighborly subsequently more tenable. A postpaid meter then again doesn't control what the supporter utilizes and in a manner is less spending agreeable since he could utilize more than he planned or can manage for that month. A postpaid meter would be at a decent preferred position if just a level expense is paid every month and not changing or expanding rates. In Nigeria, the drawback is that the expenses are generally changing or gradual and this has made many individuals need to dump the postpaid charging framework. It would have been exceptional if a level charge was paid (Bell, 2004).

As per Donkors, (2009) study, the prepaid meter charging framework energizes investment funds on power utilization along these lines more solid not at all like the postpaid charging. One can decide not to utilize power for the month and in this manner limit his bills. The main bills he may need to pay may simply be the administration or support charges which are at a level month to month expense. A postpaid charging meter framework then again doesn't empower reserve funds on power utilization since there is consistently a month to month expense to be paid for power flexibly. Most endeavors to make sure about more significant levels of moderateness have comprised of components pointed toward decreasing the expense of administrations, either influencing their quality or diminishing their interest. Different endeavors, be that as it may, have focused on the selection of

different sponsorship plans, either straightforwardly or through duty structures (Gómez-Lobo and Contreras, 2004). All in all, encounters with strategies that receive elective installment techniques for utilities have been scant. The easiest elective which is regularly proposed comprises of expanding the recurrence of charging to low pay clients. Nonetheless, a drawback of this instrument is that it would increment authoritative assortment costs, which would at last bring about higher duties (Estache et al. 2000)

2.6 Theoretical Framework

TAM is a model created by Davis (1989) and proposes that two specific convictions, Perceived Use and Perceived usability, are of essential significance for PC acknowledgment practices Davis et al., (1989); Igarria, et al., (1997); Keil, Beranek and Konsynski, (1995). As per Technology acknowledgment Model, framework use is dictated by an individual's demeanor towards the framework the essential TAM model comprises of outside factors which may influence convictions. This model is gotten from the overall Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975) in that TAM is planned to clarify PC use. In IT terms this implies that the model endeavors to clarify the demeanor towards utilizing IT instead of the mentality towards IT itself. Davis' model explicitly proposes that innovation use is dictated by conduct expectation to utilize the innovation; which is itself controlled by both PU and PEOU. Furthermore, social goal to utilize the innovation is likewise influenced by Perceived use straightforwardly. Social aim to utilize the innovation is then decidedly connected with the client.

The Technology Acceptance Model (TAM) is a hypothetical model that discloses how clients come to acknowledge and utilize an innovation (Davis 1993). Prepaid meters expects that apparent value ("how much an individual accepts that utilizing a specific framework would improve their item utilization" (Davis 1989, p. 320)) and saw convenience ("how much an individual accepts that utilizing a specific framework would be liberated from exertion" (Davis 1989, p. 320)), with the impact of previous outer factors (e.g., security concerns, accommodation), are the essential determinants for reception of another innovation (Lu et al. 2003). Seen usability directly affects apparent handiness and

both decide the purchaser's disposition toward use, which prompts social goal to utilize the framework and real utilization of the framework is a data frameworks hypothesis that models how clients come to acknowledge and utilize an innovation, the model recommends that when clients are given another innovation, various elements impact their choice about how and when they will utilize it

Client acknowledgment of innovation has been a significant field of study for more than twenty years now. Albeit numerous models have been proposed to clarify and foresee the utilization of a framework, the Technology Acceptance Model has been the one in particular which has caught the most consideration of the Information Systems people group. In this way, it is basic for anybody ready to consider client acknowledgment of innovation to have a comprehension of the Technology Acceptance Model. This paper gives a verifiable diagram of the Technology Acceptance Model (TAM) by summing up the advancement of TAM, its key applications, augmentations, constraints, and reactions from a particular rundown of distributed articles on the model. Momentum perceptions demonstrate that in spite of the fact that TAM is an exceptionally referred to show, specialists share blended feelings with respect to its hypothetical presumptions, and reasonable adequacy. It is inferred that examination in TAM needs adequate meticulousness and pertinence that would make it a settled hypothesis for the IS people group

2.7 Conceptual Framework

This is a model presentation where a research represents the relationship between variables for example independent variables and dependent variables. The relationship is shown either diagrammatically or graphically. Figure 1.1 below shows the relationship between the independent variable (prepaid metering system) and dependent variable (Electricity consumption behavior). Reliability of prepaid meters will be measured using dependable, accuracy and timing of billings. Flexibility of prepaid meters will be a proxy of speed, quick and various payments methods. Convenience of Prepaid meters will be measured using how clear, sufficient and easy of using prepaid meters while security of Prepaid meters is about trust, true information and confidentiality of information

Independent variable

Dependent variable

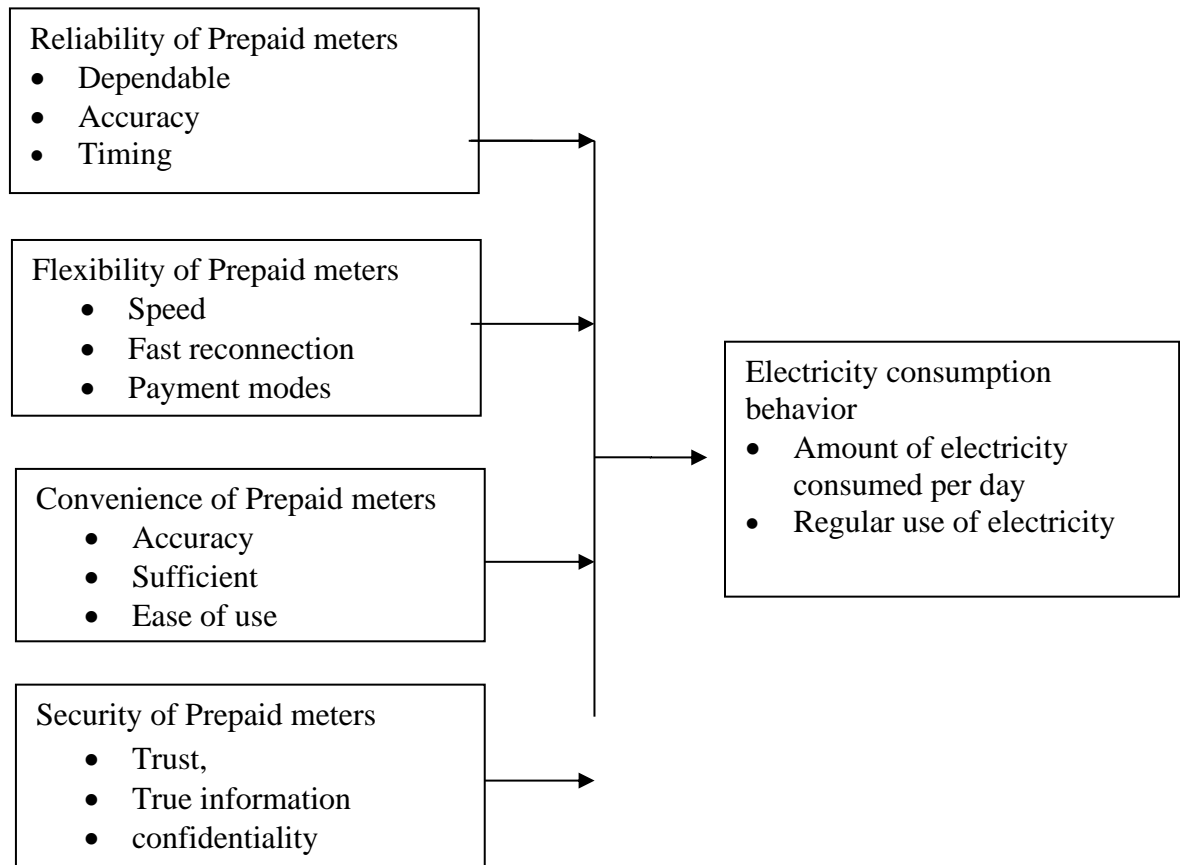


Figure 2.1 Conceptual Framework

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter highlights the procedures that will be followed in conducting the study. It is sub-divided into research design, target population, sample size and sampling methods, data collection instruments, data analysis and the validity and reliability of the instruments.

3.2 Research Design

The research adopted descriptive survey research design. The study sought to understand the various components that had contributed to projects collapsing or sustaining themselves. Descriptive survey research design was able to aid in collecting the required sets of information that was of importance in determining the influence of the independent variable to the dependent variable (Sanders et al, 2003). The descriptive survey research, focused on the “what” questions were useful for the study as it demonstrated the existence of social problems and challenged the accepted assumptions about the way things were and provoke action on the influence of prepayment metering on consumer behavior among households of Huruma estate in Uasin Gishu county.

3.3 Target Population

The research will target a population of 325 domestic, corporate and also industrial users of prepaid electricity meters in Huruma Estate, UasinGishu County. (KPLC data Base, 2015). The target population will be considered appropriate for providing a focal point for the study as regards the impact of prepaid meters on revenue collection.

3.4 Sampling Size and Sampling Procedure

3.4.1 Sampling Size

The study will use stratification sampling procedure with proportional allocation to categorize prepaid meter user into three sectors (strata), the method will be used due to assortment nature of prepaid electricity users.

The study will use Yamane (1967:886) simplified formula to calculate sample sizes

Where, n=sample size, N=population size, e= sampling error

$$n = \frac{N}{1 + N e^2} = \frac{325}{1 + 325_{0.05}^2}$$

The sample size indicates 179 respondents will be sampled.

3.4.2 Sampling Procedure

Stratification and random sampling will be used. Simple random sampling procedure will be used to pick the sample size in every stratum. The researcher will assign random numbers from 1-n to the customer in every stratum.

The sample size indicated in Table 1 will be below 179 respondents, where Neyman allocation formula will be used to distribute the sample size among the stratus, the purpose of the method is to maximize survey precision, given a fixed sample size. With Neyman allocation, the "best" sample size for stratum h would be:

$$n_h = \left(\frac{N_h}{N} \right) n$$

Where,

n_h = size for stratum h,

n = sample size,

N_h = size for stratum h ,

N =total population

Table 3.1: Sample Size

Population Category	Target Population	Sample Size
Domestic users	215	118
Commercial users	98	54
Industrial user	12	7
Total	325	179

Source, Author (2013)

3.5 Data Collection Instruments

Self-administered questionnaire will be used in this study to collect data. The survey method is appropriate for this study as it provides a quantitative description of attitudes, experiences and opinions of the ample population (Creswell 2003). It is an efficient way of gathering data using a standard set of questions. In order to increase the response rate, research assistants shall be present to clarify any arising issues during the filling of questionnaires by the respondents.

This construct will be measured from respondents 'questionnaire where they will be asked to indicate the extent of agreement or disagreement with six statements each concerning statements. Giving their response anchored with Likert- scale. During the day of the data collection, the researcher will go to the organization and seek permission from the

organization to carry out the study. After permission is granted, the researcher will proceed to the respondents to whom he shall explain the purpose of his visit. The respondents will be assured of the confidentiality of any information they give. The researcher will then administer the questionnaire to households.

3.5.1 Piloting of Instruments

Instruments of the research will be presented to households with prepaid meters in Huruma Estate in Uasin Gishu County for piloting to ensure content clarity. Upon completion of the pilot study, the data will be reviewed and the items that will not be clear will be modified accordingly. This estate will be used for piloting because it shares similar conditions.

3.5.2 Validity of Instruments

With reference to Mugenda and Mugenda (1999), validity is the consistency of the research instruments to yield consistent data that in most cases is truthful as per the study being carried out. For an instrument to be consistent, the assistance of various individuals was required to make sure that the instrument has the ability to portray and bring to reality the actual data for the statement being investigated or researched on. Validity of the research instruments for this study was done through revision of the questions tabulated in the questionnaire and reviewed by various persons including my research project supervisors and other tutors in the department who have expansive knowledge on matters relating to project management. Validity therefore entailed the soundness of the inferences founded on scores; whether the scores measured what they were supposed to measure and not measure what they are not supposed to measure. The research instruments were tested for validity to find out whether they measured the variables under study by checking the

content of the validity of the research instruments. This was achieved by the researcher by consulting supervisors who did check and assess the frequency of errors and the accuracy of data expected. The process of validation enabled the researcher to test the suitability of the questions, the adequacy of the instructions provided, the appropriateness of the format and sequence of questions. Some corrections were made to the questionnaires and the final version was printed out.

3.5.3 Reliability of Instruments

Reliability refers to the ability of a test to consistently yield the same results when repeated measurements are taken of the same individual under the same conditions (Koul (2005)). In determining the reliability of the instruments, a number of tests were done to ensure consistency was achieved. The test-retest method was adopted in this study. Reliability can be argued as the ability of the research instrument to collect the correct, actual, and truthful information from the respondents without being biased on one item or group. Through reliability, the researcher determined the parameters that are not sufficient from the instruments thus correcting them to the required levels. For this to happen, persons were selected based on a given number (20%) of the respondents of which the questionnaire was issued for specific several times until the coefficient of reliability was achieved. Based on the results obtained Pearson Moment Correlation that if it falls at a coefficient of above 0.75, the instrument had a reliability level of 0.856 which actualized the usage of the instrument to collect data for the study according to feedback obtained from the pilot study that informed change of the questionnaire before final administration in the field.

3.6 Data Collection Procedures

The researcher did seek a research permit from the National Commission for Science, Technology, and Innovation (NACOSTI). The methods for data collection were both formal and informal with structured interviews for the collection of primary data. Data collected was mostly quantitative with some qualitative data as well. The interview sessions with KPLC management were scheduled and reserved two weeks in advance. The reason for administering questionnaires in-person to respondents by the researcher was to establish rapport with the respondents as he introduced the research provided clarifications on the spot to questions that were sought by the respondents and offered a mechanism of collecting the questionnaire afterward on a time frame agreed by the researcher and respondents mostly three days.

3.7 Data Analysis and Presentation

Data analysis refers to organizing, provision of structure, and eliciting meaning Polit and Hungler (1997). This research ensured that research questionnaires were adequately checked for credibility and verification. The primary data collected in this study were coded and tested for completeness followed by analysis using descriptive statistics and presented using tables and graphs. Both qualitative and quantitative data analysis were used in the study owing to the variables being examined and the nature of the problem under study. Descriptive statistical techniques (frequencies, percentages, means and standard deviation) were applied to analyze data collected from the field from questionnaires to aid the interpretation of findings and analysis of data using Statistical Package for Social Sciences (IBM SPSS Version 24) was employed due to the enormous quantity of data.

3.8 Ethical considerations

The ethical concerns for any research study were applied. Respondents' anonymity, confidentiality, and privacy were observed during data collection. Permission was sought from the County Secretary being the head of county public service and coordinator of county government functions as provided for under schedule four of the constitution of Kenya 2010 to facilitate data collection from respondents. The questionnaire and interview guide accompanied by a cover letter described the objectives of the study assuring the respondents of confidentiality of the information to be provided and request for honesty in answering the questions. Participation in the study was voluntary. Authority to conduct the research was sort from the National Commission for Science and Innovation (NACOSTI) and the University of Nairobi.

Table 3.2 Operationalization of variables

Objectives	Indicators	Measurement of variables
1. reliability of prepaid meters influence consumer behavior	Prepaid meters reliability	Refer to probability that a prepaid meter system will produce correct outputs up to some given time. It will be measured using <ul style="list-style-type: none">• Correct billing• Easy to monitor bill usage• Easy to recharge
2. flexibility of prepaid meters influence consumer behavior	Prepaid meters flexibility	Flexibility means being able to pay bills at customers own time and at his/her willing amount. It will be measured using <ul style="list-style-type: none">• Flexible Payment time.• Flexible bills• flexible installation
3. convenience of prepaid meters influence consumer behavior	Prepaid meters convenience	Refer to quality of being suitable to one's comfort, purposes, or needs" and as "something that increases comfort or saves work. It will be measured using <ul style="list-style-type: none">• easy to access• suited for need• favorable to one's comfort• no queing while paying bills• no traveling
4. security of prepaid meters influence consumer behavior	Prepaid meters security	Refer safety of using prepaid meter system for billing <ul style="list-style-type: none">• secure transactions• less risky• trustworthy

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, DISCUSSION AND INTERPRETATION

4.2 Questionnaire response rate

A total of 179 questionnaires were given to respondents, with 175 of that questionnaire were correctly filled and returned. This represented a 97.8% questionnaire response rate. According to Kothari (2010), a response rate of 65% is sufficient to continue with the study.

4.3 Demographic information

The study sort to determine the general information of the respondents who participated in the study.

4.4 Gender of the respondents

The study sort to determine the gender of the respondents in the study and the findings represented on table 4.1.

Table 4.1: Gender of respondents

	Frequency	Percent
Male	92	52.6
Female	83	47.4
Total	175	100.0

Table 4.1 shows that 52.6% (92) of the total number of respondents were male while 47.4% (83) were female. This showed that majority of the respondents were male compared to female.

4.5 Age of the respondents

The study opted to determine the age of the respondents who took part in the study and results tabulated on table 4.2.

Table 4.2: Age of respondents

	Frequency	Percent
18-23 years	82	46.9
24-29 years	60	34.3
30-35 years	16	9.1
36-41 years	5	2.9
42-47 years	12	6.9
Total	175	100.0

Table 4.2 shows that 46.9% (82) of the respondents were aged between 18 – 23 years, 34.3% (60) were aged between 24 – 29 years, 9.1% (16) were aged between 30 – 35 years, 2.9% (5) were between the ages of 36 – 41 years while 6.9% (12) were between the ages of 42 – 47 years. The study findings indicated that majority of users prepaid metering were between the ages of 18 – 29 years who constituted a cumulative percentage of 81.1%.

4.6 Level of education

The study sort to determine the level of education of the respondents and results represented in table 4.3

Table 4.3 Level of education

	Frequency	Percent
Informal education	5	2.9
Primary	52	29.7
Secondary	59	33.7
Tertiary	59	33.7
Total	175	100.0

From table 4.3, it was seen that 2.9% (5) of the respondents had formal education, 29.7% (52) had primary education, 33.7% (59) had secondary education while 33.7% (59) had tertiary education. The study findings indicated that all the respondents had knowledge with regards to prepaid metering and its usage thus understood the scope of the study.

4.7 Average monthly consumption

The study wanted to establish what the average consumption of power each of the respondents used and results are represented on table 4.4.

Table 4.4: Average monthly consumption

	Frequency	Percent
500 and below	5	2.9
501-1000	11	6.3
1001-5000	23	13.1
5001-10000	47	26.9
10001-15000	72	41.1
15001 and above	17	9.7
Total	175	100.0

Table 4.4 2.9% (5) of the respondents monthly average consumption was below 500 units, 6.3% (11) used between 501 – 1000 units, 13.1% (23) used between 1001 – 5000 units, 5001 – 10000 units were used by 26.9% (47) of the respondents while 41.1% (72) used between 10001 – 15000 units and 9.7% (17) used 15001 and above. The findings showed that majority of the respondents had a consumption of between 1001 – 15000 units.

4.8 Period of usage

The study further wanted to establish the period of use of the prepaid metering by the respondents and results are represented in table 4.5

Table 4.5: Duration of using prepaid meters

	Frequency	Percent	Cumulative Percent
Less than 1 year	5	2.9	2.9
One-2 years	52	29.7	32.6
Three-4 years	100	57.1	89.7
Over 5 years	18	10.3	100.0
Total	175	100.0	

From table 4.5, 2.9% (5) of the respondents had used the prepaid metering for less than one year, 29.7% (52) had used for a period of between 1 – 2 years, 57.1% (100) had used for

between 3 – 4 years while 10.3% (18) had used it for more than 5 years. These findings showed that the respondents had interaction with the prepaid metering and understood how it worked.

4.9 Reliability of prepaid metering

The study sort to determine how reliable the prepaid metering was to the KPLC customers who were using them.

4.10 Payment of electricity bills

The study sort to establish whether payment of electricity had been made easier due to the introduction of prepaid metering. The results are represented in table 4.6

Table 4.6: Payment of electricity bills

		Frequency	Percent	Cumulative Percent
Valid	SDA	35	20.0	20.0
	DA	30	17.1	37.1
	N	42	24.0	61.1
	A	40	22.9	84.0
	SA	28	16.0	100.0
	Total	175	100.0	

Table 4.6 shows that 20.0% (35) of the respondents strongly disagreed that with introduction of prepaid metering had made most of the respondents pay their bills anytime they wanted, 17.1% (30) of the respondents disagreed with this statement, 22.9% (40) agreed and 16.0% (28) strongly agreed. 24.0% (42) of the respondents were neutral about this statement. These findings showed that majority of the respondents agreed with

introduction of prepaid metering (M=2.977 and Std. = 1.361) had actually made it possible for one to pay their bills anytime they wanted. These findings are supported by Allen, (2009) who argued that with increased in reliability and customer trust with the deployment of these new prepayment meters, customers were fairly billed based on their usage thus found favor amongst them.

4.11 Ease of usage

The study sort to understand the introduction of prepaid metering usage was easier for consumers to pay compared to previous methods. The results are represented on table 4.7.

Table 4.7: it was easier to use prepaid meters in recharging the tokens

		Frequency	Percent	Cumulative Percent
Valid	SDA	40	22.9	22.9
	DA	54	30.9	53.7
	N	53	30.3	84.0
	A	6	3.4	87.4
	SA	22	12.6	100.0
	Total	175	100.0	

From table 4.7, the study findings show that 22.9% (40) of the respondents strongly disagreed, 30.9% (54) disagreed with that recharging of prepaid meters was easier with reference to the previous metering method, 12.6% (22) strongly agreed while 3.4% (6) agreed. This represented (M = 2.52 and Std. = 1.24) of the respondents who commented that the new prepaid metering had little effect on the payments of power utility had not changed. 30.3% (53) of the respondents were neutral about the argument being investigated.

4.12 Installation

The study opted to establish if installation of prepaid meters was difficult among the users and the employees of the company who avail them, the findings were represented in table 4.8.

Table 4.8: Prepaid meter installation

	Frequency	Percent	Cumulative Percent
Strongly Disagree	23	13.1	13.1
Disagree	101	57.7	70.9
Neutral	12	6.9	77.7
Agree	17	9.7	87.4
Strongly Agree	22	12.6	100.0
Total	175	100.0	

Table 4.8 showed that 13.1 % (23) of the respondents strongly disagreed that installation of the prepaid meters was simple, this was further supported by 57.7% (101) who disagreed to this argument. 12.6% (22) of the respondents strongly agreed that they found the prepaid meters easy to install, this was in line with 9.7% (17) who agreed while 6.9% (12) did not comment. These findings showed that majority of households found it difficult to install the prepaid meters due to various factors that were known to them.

4.13 Payment of electricity

The study sort to determine if the payment of electricity using prepaid metering was easy to the consumers and the findings are represented in table 4.9

Table 4.9: Payment of electricity

	Frequency	Percent	Cumulative Percent
Strongly Disagree	47	26.9	26.9
Disagree	71	40.6	67.4

Neutral	18	10.3	77.7
Agree	22	12.6	90.3
Strongly Agree	17	9.7	100.0
Total	175	100.0	

Table 4.9 shows that 26.9% (47) of the respondents strongly disagreed, 40.6% (71) disagreed that the payment of electricity using prepaid metering was easy, in contrary to 12.6% (22) and 9.7% (17) who agreed and strongly agreed to this statement. Further 10.3% (18) of the respondents were neutral. These findings suggested that most of the users of prepaid metering were not well acquainted with prepaid metering methods of payment thus posed a challenge to majority of them.

4.14 Electricity consumption

The study opted to determine if the respondents within the area of study had the ability to know how many units of electricity they consumed within specific periods and the results are presented in table 4.10

Table 4.10: Electricity consumption

	Frequency	Percent	Cumulative Percent
Strongly Disagree	53	30.3	30.3
Disagree	65	37.1	67.4
Neutral	23	13.1	80.6
Agree	17	9.7	90.3
Strongly Agree	17	9.7	100.0
Total	175	100.0	

From table 4.10 it was seen that 30.3% (53) of the respondents and 37.1% (65) strongly disagreed and disagreed with this argument has majority of them did not know what their consumption was, further 9.7% (17) and another 9.7% (17) strongly agreed and agreed to this statement. 13.1% (23) were neutral about this argument.

4.15 Flexibility of prepaid meters

The study was determined to understand whether the introduction of prepaid metering was adequate and fulfilled the desires of consumers thus flexible within their environment of use.

4.16 Feedback and usage

The study sort to determine how fast the prepaid metering was compared to the previous generation of postpaid metering and the results presented in table 4.11

Table 4.11: Feedback and usage

	Frequency	Percent	Cumulative Percent
Strongly Disagree	34	19.4	19.4
Disagree	39	22.3	41.7
Neutral	30	17.1	58.9
Agree	72	41.1	100.0
Total	175	100.0	

From table 4.11 it was seen that 19.4% (34) of the respondents strongly disagreed that the time taken for feedback of usage was still long, this was also accented upon by 22.3% (39) who also disagreed, this was disapproved by 41.1% (72) of the respondents who agreed that with introduction of prepaid metering the time taken to respond to queries and know the amount of electricity used was faster compared to the previous postpaid method, 17.1% (30) were neutral.

4.17 Faster reconnection and use of electricity

The study further wanted to determine if the period taken for reconnection of electricity when disconnected for prepaid was similar with postpaid metering and the results shown in table 4.12

Table 4.12: Faster reconnection

		Frequency	Percent	Cumulative Percent
Valid	Strongly Disagree	44	25.1	25.1
	Disagree	11	6.3	31.4
	Neutral	42	24.0	55.4
	Agree	78	44.6	100.0
	Total	175	100.0	

Table 4.12 shows that 25.1% (44) of the respondents strongly disagreed that reconnection of electricity after disconnection was faster compared to the previous method used. This was supported by 6.3% (11) who disagreed. In contrary 44.6% (78) of the respondents agreed that the reconnection of electricity was much faster compared to postpaid metering was being used initially, 24.0% (42) of the respondents were neutral.

4.18 Payment modes and use of electricity

The study further sort to determine if the payment methods introduced with prepaid metering were efficient and reliable for use by consumers. The findings are represented in table 4.13.

Table 4.13: Payment modes and use

	Frequency	Percent	Cumulative Percent
Disagree	24	13.7	13.7
Neutral	24	13.7	27.4
Agree	34	19.4	46.9

Strongly Agree	93	53.1	100.0
Total	175	100.0	

Table 4.13 shows that 13.7% (24) of the respondents disagreed that the modes of payments used by prepaid metering was not reliable and efficient as such, however, 53.1% (93) of the respondents strongly agreed that the introduced methods of payment were reliable and efficient as the response time was quicker and the reconnection process faster compared to the postpaid method. This was supported by 19.4% (34) who agreed to this while 13.7% (24) were neutral. This proved that majority of the respondents actually had the know-how of the payment methods used thus convenient to them.

4.19 Convenience of prepaid metering

The study sort to find out whether the introduction of prepaid metering was a good innovation for the company or a disaster in the making.

4.20 Affordability

The study sort to establish if the prepaid meters were affordable to the consumers and the results represented in table 4.14.

Table 4.14: Affordability

	Frequency	Percent	Cumulative Percent
Valid Disagree	17	9.7	9.7
Neutral	41	23.4	33.1
Agree	40	22.9	56.0
Strongly Agree	77	44.0	100.0
Total	175	100.0	

From table 4.14, the finding showed that 44.0% (77) of the respondents acquired that the prepaid meters were affordable to them, this was in line with 22.9% (40) who agreed to this argument. However, 9.7% (17) of the total number of respondents disagreed with this

argument citing the high costs passed on to the consumer in terms of the installation costs. Another set of respondents 23.4% (41) were neutral or did not comment on this issue.

4.21 Maintenance costs

The study sort to establish whether the maintenance costs associated with prepaid metering was affordable or not and the finding represented on table 4.15.

Table 4.15: Maintenance of prepaid metering

		Frequency	Percent	Cumulative Percent
Valid	Disagree	17	9.7	9.7
	Neutral	24	13.7	23.4
	Agree	35	20.0	43.4
	Strongly Agree	99	56.6	100.0
	Total	175	100.0	

Table 4.15 revealed that 56.6% (99) of the respondents and 20.0% (35) strongly agreed and agreed to this statement that costs associated with prepaid meter maintenance was high compared to the previous generation of meters, this was opposed by 9.7% (17) ho disagreed with this argument while 13.7% (24) had no opinion. The represented a mean of (M= 4.2 and SD = 1.021) which shows a small relation between the consumer behaviour and prepaid meter maintenance.

4.22 Availability of prepaid metering

The study sort to establish how available are the prepaid meters to consumers within the area of study and the results presented on table 4.16.

Table 4.16: Availability of prepaid metering

	Frequency	Percent	Cumulative Percent
Disagree	46	26.3	26.3
Neutral	12	6.9	33.1
Agree	47	26.9	60.0
Strongly Agree	70	40.0	100.0
Total	175	100.0	

From table 4.16, the findings showed that majority of the respondents with cumulative percentage of 66.9% (117) agreed that the prepaid meters were available to the consumers who needed them. This was disputed by 26.3% (46) who disagreed with this argument while 6.9% (12) were neutral. This findings showed that KPLC had made it possible for all those consumers who wanted to switch to the current metering system from the previous generation easy by providing the meters to its consumers upon application for the meters was done.

4.23 4.5.4 Installation costs

The study sort to determine how the installation costs were being met by the consumers for the prepaid meters and the findings represented in table 4.17.

Table 4.17: Installation costs

	Frequency	Percent	Cumulative Percent
Strongly Disagree	12	6.9	6.9
Disagree	76	43.4	50.3
Neutral	35	20.0	70.3
Agree	22	12.6	82.9
Strongly Agree	30	17.1	100.0
Total	175	100.0	

From table 4.17 it was evident that KPLC allowed the installation costs to be made in installments as supported by a cumulative percentage 29.7% (52) of the respondents who agreed. This was however disputed by a cumulative percentage of 50.3% (88) of the respondents who disagreed with this argument. A group of 20.0% (35) of the respondents had no comments for these arguments. The findings discorded the reports that the installation costs were footed by various organizations like the World Bank funding that had allowed KPLC to subsidize the installation costs for consumers in areas that the middle class resided and those in the rural areas. The payments were found to be included in the payments made by the user in the purchasing of tokens.

4.6 Security of prepaid metering

The study opted to understand how secure were the prepaid metering compared to the previous postpaid meters within households in Eldoret Municipality.

4.24 4.6.1 Prepaid meters security

The study sort to determine if the prepaid meters were secure within their areas of installation compared to the previous generations of meters and the results presented in table 4.18.

Table 4.18: Prepaid meter security

		Frequency	Percent	Cumulative Percent
Valid	Disagree	51	29.1	29.1
	Neutral	35	20.0	49.1
	Agree	65	37.1	86.3

Strongly Agree	24	13.7	100.0
Total	175	100.0	

From table 4.18 it was evident that majority of the respondents with cumulative percentage of 50.8% (89) of the respondents asserted that the prepaid meters were safe within their areas of installation compared to the previous meters. This argument was refuted by 29.1% (51) of the respondents who disagreed with this, while 20.0% (35) were neutral with regards to the argument. This findings showed that the installation location of the prepaid meters was secure as majority of the respondents a tasted that these prepaid meters were installed in their houses compared to the postpaid meters that were installed outside. This provided the consumer with all the security they need and monitoring how they spent their tokes.

4.25 4.6.2 Consumer safety

The study opted to determine if the prepaid meters were safe for consumers and the results tabulated in table 4.19.

Table 4.19: Consumer safety

		Frequency	Percent	Cumulative Percent
Valid	Disagree	87	49.7	49.7
	Neutral	30	17.1	66.9
	Agree	52	29.7	96.6
	Strongly Agree	6	3.4	100.0
	Total	175	100.0	

Table 4.19 showed that 49.7% (87) of the total number of respondents disagreed with this notion that prepaid meters were secure than the previous postpaid meters. This was however not acceptable to a cumulative percentage of 33.1% (58) of the respondents agreed

that the prepaid meters were safe compared to the previous generation of meters. A percentage of 17.1% (30) were neutral about the issues and they did not see the differences between the two meters. The findings revealed that the prepaid meters were not a surprise to the majority of the respondents as they based their arguments on installation methods, place of installation and the wiring techniques used by the technicians. However, to some extent the security of the prepaid meters was found to be better compared to the previous postpaid meters as it reduces cases of tampering with the meters as the owner is the custodian of the meters.

4.26 4.6.3 Prepaid metering payments

The study was concerned with the security of the payment method used by the company on the prepaid metering and the results represented on table 4.20.

Table 4.20: Prepaid metering payments

		Frequency	Percent	Cumulative Percent
Valid	Strongly Disagree	39	22.3	22.3
	Disagree	47	26.9	49.1
	Agree	47	26.9	76.0
	Strongly Agree	42	24.0	100.0
	Total	175	100.0	

From table 4.20 the findings showed that a cumulative percentage of 50.9% (89) of the respondents agreed that with the prepaid meters it was easier for them to pay their usage compared to the postpaid meters where a lot of irregularities were experienced in terms of approximating the usage of consumers which was either over approximation or issuance of bills that were not for the customers. This was not in favor with a group of 49.1% (86) who disagreed with this notion. This was an insight to the company as it brought in consumer safety in terms of providing adequate information on their usage and then honoring their payment obligation. The findings also saw majority of the consumers advocating for installation of the prepaid metering within their areas of residence as they reduced the interaction between the company employees and the consumer thus reduction of biases and conflicts with consumers.

4.27 4.6.4 Power of purchase

The study opted to discover if the consumers had the ability to decide what amount of power they needed and the results represented in table 4.21.

Table 4.20: Power of purchase

	Frequency	Percent	Cumulative Percent
Neutral	46	26.3	26.3
Agree	58	33.1	59.4
Strongly Agree	71	40.6	100.0
Total	175	100.0	

From table 4.20 it found that a cumulative percentage 73.7% (129) of the respondents were happy with the prepaid metering has it provided those with opportunity to purchase them to purchase and monitor their usage while a percentage of 26.3% (46) did not comment on this. The findings showed that introduction of prepaid metering was an awesome idea has it had reduced the complains that consumers had raised with inflated bills. This brought in the most appropriate changes that led to adoption of this meters had it increased revenue collection and provided consumers with various packages that proved adequate for use.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

This chapter gives a summary of the research findings as analyzed in the previous chapter. It shows the conclusions as per the research questions and also the researcher's recommendations. It was also suggesting the areas for further research.

5.2 Summary of findings.

The following represents summary of the research findings of the topic influence of prepayment metering on consumer behavior among households in Eldoret Township. The summary is arranged based on the objectives of the study.

5.2.1 To establish how reliability of prepaid meters influence consumer behavior

The study established that reliability was a key factor on consumer loyalty and increased market segmentation. The findings proved that prepaid metering was a new measure that influenced the way consumers viewed the position of the organization and its association. It was found that the prepaid meters were easy to use as it provided an interface that was costumed to consumers that posed no challenges. Further, the installation mechanism was found to be to some levels difficult as it required a clear know how on the installation procedures. This new innovation proved that payment of electricity was done in time and the issues of reconnection and disconnection were faced away thus it was the duty of the consumer to know what their consumption is and how to manage their usage. These findings proved that ($M=2.5394$ and $Std. = 1.062306$) the introduction of prepaid metering had to great lengths influenced consumer behavior thus proved to be a better model of solving conflicts between the company and consumers.

5.2.2 Flexibility of Prepaid Meters and Consumer Behavior

The findings from the study identified that prepaid metering had made it easier for the consumers to get rapid feedback with regards to payments and usage statistics. Reconnection was found to be instant as the moment one paid the bill the power was reconnected immediately as compared to previous times when a KPLC personnel had to come and reconnect and one had to pay reconnection fee which was a setback to majority of the consumers. The ability of one to use their mobile phones and other electronic payment services was a thumbs up as it reduced the periods and time wasted on long queues experienced during payment of electricity bills. It was found that prepaid metering was convenient especially for households as it allowed for well managed use of power thus found favor amongst majority of households. The findings approved that prepaid metering was a proper and effective way of ensuring consumers paid their bills on time and the company increased its revenue portfolio ($M=3.393$ and $Std.= 0.891$) which resulted to improved consumer behavior.

5.2.3 Convenience of Prepaid Meters and Consumer Behavior

Based on the area of study, the findings showed that with introduction of prepaid metering had to great lengths in making consumers satisfied with management of power. The

findings revealed that consumers had the power of purchasing that allowed them to purchase the amount of electricity tokens they can afford based on their financial muscle. The study further showed that maintenance costs had reduced as the company did not require individuals to go to attend to consumers as was with the previous metering systems. The availability of this meters was found to be adequate as it was also realized it was a World Bank project to support households that could not afford the installation costs. The introduction of these prepaid metering (M= 3.797714 and Std. = 0.880697) showed that they provided convenience to the consumers as stipulated by the findings. Majority of the consumers or households depend on power to run the various activities that include lighting to entertainment, with this kind of system majority of them are assured that bills shall not be an issue of the future but a past tense scenario.

5.2.4 Security of Prepaid Meters and Consumer Behavior

The study found that prepaid metering was more secure in terms of disconnection and reconnection as the consumer had the powers of either reconnecting or not. It safe guided the consumer from scrupulous persons who mascaraed as KPLC employees thus performing illegal connections and causing dangers to many lives. It also provided for various payment mechanisms that are found to be more acceptable with the current age of technological advancement. It also provided various tariffs that many households found to be affordable thus contributed to consumer behavior. The provision and availability of security (M= 3.35 and Std. = 0.861) showed that with introduction of prepaid metering consumers were safe from the various threats associated with it thus consumer behavior was found to be influenced by the security provided.

5.3 Conclusion of the study

The study concluded that the reliability of new technologies that is introduced to consumers should be vetted and piloted upon before full commissioning as some of the technologies are not reliable. The technologies should be simple for the end user to interact with it without any complications. Consumer awareness should be done as it was noticed that consumer awareness within area of study was not done thus the entire faced some level of resistance as majority of the households did not understand what was been done. The prepaid metering was found to be convenient to consumers as it solved a larger percentage of their problems that included late payment of bills due to late provision of these bills. The ability of consumers to control their expenditure on power was a new development

that protected them from the exponentially inflated bills that were issued after approximation. Consumer behavior was found to be based on the ability of the service provider offering services that were acceptable within consumer purchasing powers thus any fault caused by the service provider would lead to a drift and lose of commitment and drift by consumers.

5.4 Suggestions for further studies

Recommendations from the researcher are that more studies should be conducted in other areas within the county and nationwide as this shall provide adequate information on the influence of prepaid metering on consumer behavior.

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APPENDIX 1: QUESTIONNAIRE

INFLUENCE OF PREPAYMENT METERING ON CONSUMER BEHAVIOR AMONG HOUSEHOLDS OF HURUMA ESTATE IN UASIN GISHU COUNTY.

Dear Respondent,

I am an MA student at Nairobi University business school and I am conducting a study on **influence of prepayment metering on consumption behavior among households of Huruma estate in UasinGishu County**. I request you to take a few minutes to fill this questionnaire. Information that will be provided through filling of this questionnaire is considered of great value to this study and will be treated with confidentiality. If you have any questions or concerns about completing the questionnaire or about participating in this study, you may contact me on 0700 929 302 or smainam@gmail.com. This study has been approved by the University of Nairobi.

SECTION A

BACKGROUND INFORMATION

1. Gender

- Male
- Female

2. Kindly indicate your age bracket

- 18-23 years
- 24-29 years
- 30-35years
- 36-41years
- 42-47years
- 48-53years
- 54-59years

60 and above

3. Kindly indicate the highest level of education attained.

Informal education

Primary

Secondary

tertiary

4. Kindly indicate your average monthly Consumption (In Kshs)

500 and below

501-1000

1001-5000

5001-10,000

10,001- 15,000

15,001 and above

5. Kindly indicate the duration for which you have used prepaid meters

Less than 1 year

One – 2 years

Three – 4 years

Over 5 years

SECTION B

Q3. On a scale of 1-5, express your opinion in usefulness where; 1.SDA= strongly disagree, 2.DA= Disagree, 3.N=Neutral, 4. A = Agree while 5.SA = Strongly Agree.

Please tick(√) in the most appropriate box.

RELIABILITY OF PREPAID METERS

	Opinion	SDA	DA	N	A	SA
1	Am able to pay my electricity bills at any time using prepaid meters					
2	Using prepaid, am able to pay any amount which I can afford					
3	Prepaid meters are easier to install anywhere in the house					

FLEXIBILITY OF PREPAID METERS

	OPINION	SDA	DA	N	A	SA
1						
2						
3						
4						

CONVENIENCE OF PREPAID METERS

	OPINION	SDA	DA	N	A	SA
1						
2						
3						

4						
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SECURITY OF PREPAID METERS

	OPINION	SDA	DA	N	A	SA
1						
2						
3						
4						

	OPINION	SDA	DA	N	A	SA
1	My prepaid meter has been functioning properly without any interruptions.(timeliness)					
2	Am able to determine my consumption rate and pay them in time(bad debts)					
3	I pay my bills prior to consumption (Bad debts)					
4	I no longer have to interact with Kenya Power employees on payment of my bills.(man power)					
5	I have never been late in paying my electricity bills (timeliness/ bad debts)					

APPENDIX 2: PROPOSED BUDGET

TASK	COST
Data collection	50,000
Travel expenses	25,000
Stationery	15,000
Data analysis	15,000
Miscellaneous	10,000
TOTAL	115,000

APPENDIX 3: RESEARCH SCHEDULE

DUTY	SCHEDULE
Data collection	July 2016
Data analysis	August 2016
Conclusions and recommendations	August 2016
Intent to submit	August 2016