

THE EFFECT OF PROCESS INNOVATION ON FINANCIAL
PERFORMANCE IN UTILITY COMPANIES IN KENYA: A CASE STUDY OF
THE KENYA POWER AND LIGHTING COMPANY

OMESA ANGELA NYAMOITA

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DECLARATION

I declare this research project is my original work and has not been submitted for an award of a degree in any other university or institution of higher learning for examination/academic purposes.

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

OMESA ANGELA NYAMOITA

REG. NUMBER: D61/64463/2013

This research project has been submitted for examination with my approval as the university supervisor

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

MR. HERICK ONDIGO

LECTURER

DEPARTMENT OF FINANCE AND ACCOUNTING

SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI

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DEDICATION

This research project is dedicated to my dad-Patrick Omesa, my mum-Sophia Kemunto, my twin sister-Everlyne Moraa, my three brothers-Francis Osiemo, Thomas Mokaya and Michael Obare and all those who gave me moral support in my studies.

May God bless you all!

TABLE OF CONTENTS

DECLARATION.....	i
ACKNOWLEDGEMENTS	ii
DEDICATION.....	iii
LIST OF ABBREVIATIONS	vii
ABSTRACT.....	viii
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 Background of the study	1
1.1.1 Process Innovation.....	2
1.1.2 Financial Performance	3
1.1.3 Effect of Process Innovation on Financial Performance	4
1.1.4 Utility Companies in Kenya	4
1.2 Research Problem	6
1.3 Research Objective	7
1.4 Value of the Study	7
CHAPTER TWO	9
LITERATURE REVIEW	9
2.1 Introduction.....	9
2.2 Theoretical Review	9
2.2.1 Diffusion of Innovation Theory.....	9
2.2.2 The Theory of Innovation Translation.....	10
2.2.3 Actor-Network Theory	11
2.2.4 The Technology Acceptance Model.....	12
2.3 Determinants of Financial Performance	12
2.3.1 Corporate Governance	12
2.3.2 Age of the firm	13
2.3.3 Firms Size	13
2.3.4 Ownership Structure	13
2.3.5 Asset Structure.....	14
2.3.6 Firm’s Risk Management	14

2.3.7	Location	14
2.3.8	Capital Structure	14
2.4	Empirical Review.....	15
2.4.1	International Evidence	15
2.4.2	Local Evidence	17
2.5	Summary of the Literature Review	18
CHAPTER THREE		20
RESEARCH METHODOLOGY		20
3.1	Introduction.....	20
3.2	Research Design.....	20
3.3	Data Collection	20
3.3.1	Data Validity and Reliability	21
3.4	Data Analysis	21
3.4.1	Analytical Model	21
3.4.2	Test of Significance	22
CHAPTER FOUR.....		23
DATA ANALYSIS, RESULTS AND INTERPRETATION.....		23
4.1	Introduction.....	23
4.2	Descriptive Statistics.....	23
4.3	Inferential Statistics	24
4.3.1	Correlation Analysis	24
4.3.2	Regression Analysis	25
4.4	ANOVA Interpretation	27
4.5	Interpretation of the Findings.....	28
CHAPTER FIVE		30
SUMMARY, CONCLUSION AND RECOMMENDATIONS		30
5.1	Introduction.....	30
5.2	Summary	30
5.3	Conclusion	31
5.4	Policy Recommendations.....	32
5.5	Limitations of the Study.....	33

5.6	Suggestions for Further Studies	34
	REFERENCES.....	35
	APPENDICES	38
	APPENDIX I: LIST OF UTILITY FIRMS IN KENYA AS AT JUNE 2014.....	38
	APPENDIX II: DATA COLLECTION FORM	39
	APPENDIX III: LETTER OF AUTHORITY	40

LIST OF ABBREVIATIONS

ANT	Actor-Network Theory
ANOVA	Analysis of Variance
ATM	Automated Teller Machine
DOI	Diffusion of Innovation
IT	Information Technology
KPLC	Kenya Power and Lighting Company Limited
NCWSC	Nairobi City Water and Sewerage Company
ROA	Return on Assets
ROE	Return on Equity
RTGS	Real Time Gross Settlement
SMEs	Small and Medium Enterprises
SPSS	Statistical Package for the Social Science
TIC	Technological Innovation Capabilities
USA	United States of America

ABSTRACT

Utility services such as water and electricity are very important resources for a country's economic growth. Utility companies adopt innovations in order to provide better service delivery to customers, improve revenue collection, improve meter reading, billing accuracy, save customer and company's time and resources, empower customers of any upcoming service events and for up-scaling for competition purposes by adopting to the ever changing environment. The main objective of this study was to determine the effect of process innovation in utility companies in Kenya. A case study was done on Kenya Power and Lighting Company on their prepaid service process innovation. Descriptive research design was used in the study. Secondary data used in this study was from year end 2005 to 2014 for KPLC. Data collected was analyzed using descriptive and inferential statistics to interpret the data. The regression analysis model showed that there was a positive correlation coefficient (r) = 0.978 and co-efficient of determination (r^2) = 0.957 and adjusted r of 0.903. The results of r^2 implied that the variations of process innovation, asset structure and debt ratio explained 95.7 % of the variations in KPLC return on asset. The findings showed a positive statistically significant relationship of 0.013 between sale of electricity, a measure of the prepaid process innovation and financial performance indicator of return on assets. Customer and sales (kWh) per employee, with 0.727 and 0.599 significance respectively does not affect the financial performance. The asset structure significantly affects the financial performance negatively with a significance of 0.004. Debt ratio with significance of 0.522 does not have a significant effect on financial performance of KPLC. The study recommended that there was need for government to foster innovation among the utility companies which was turn expected to improve revenue collection, improve utility billing and accuracy, reduce unnecessary costs and be more competitive in the market.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Firms compete successfully when they offer new, better products and services. These to gain a competitive advantage in the industry they are operating in. Competitive advantage derives from the ability to do and make things better (Dodgson, Gann and Salter, 2008). Michael Porter describes three types of generic business strategy factors that are considered to deal with competitive advantage. They are cost leadership, differentiation and market segmentation. Competitive advantage exists in relation to rivals operating within an industry as factors that enable an organization to earn a higher rate of profit.

In today's global and dynamic competitive environment, product innovation is becoming more and more relevant, mainly as a result of three major trends; intense international competition, fragmented and demanding markets and diverse and rapid changing technologies (Wheelwright and Clark, 1992). Firms' offer products, that are adapted to the needs and wants of target customers and that market them faster and more efficiently than their competitors are in a better position to create a sustainable competitive advantage (Calantone, Vickery and Droge, 1995). Competitive advantage is increasingly derived from knowledge and technological skills and experience in the creation of new products (Teece, 2003).

Financial innovation can be defined as the act of creating and popularizing new financial instruments, as well as financial technologies, institutions and markets (Lerner & Tufano, 2011). Financial innovation can also be viewed as introduction of new financial instruments or services or practice, introduction of new uses for funds, finding out new sources of funds, introduction of new processes or techniques to handle day to day operations, or establishing a new emergence of spectacular growth of new financial institutions and markets (Allan & Gale , 1994)

1.1.1 Process Innovation

Technology is the application of scientific knowledge for practical purposes. It is the design; making and use of tools, machines, techniques and methods in order to solve an existing problem, improve a pre-existing solution or perform a specific function. Technology is a social process which is socially and institutionally embedded, (Dicken, 1998). Technological change has been described by technological push (Schumpeter, 1939) and demand pull or their interaction as triggers of innovation. Innovation cannot be separated from its local and national as well as global contexts and from political and social processes, let alone the main economic trends. Hamel and Prahalad (1994) suggest that innovations come to be seen as a result of collaboration for integration of skills and capabilities when competing for the future markets.

Process Innovation covers the introduction of new business processes leading to increased efficiency, market expansion and client data management, for example ATMs, online service payments-(Mpesa, Airtel, Orange Money), office automation, RTGS, use of accounting packages, agency banking, mobile banking and client data management software. The innovation which we are considering in this study will be the process innovations that affect the financial performance in utility sector in Kenya. This includes; the prepaid power electronic service is the service where Kenya Power and Lighting Company give you the power to control your electricity consumption through the pre-paid power system. A customer can buy a credit slip from authorized vendor or through your mobile phone. With a pre-paid meter, paper bills, disconnections and the hassle of reconnections are things you never have to deal with again.

The 'jisomee mita-read your meter' initiative which is a mobile -based, web supported system that enables the customer to pay the bills, pay loans, submit meter readings, receive bills, and account status reports using their mobile phones. The Nairobi Water in conjunction with the World Bank, is piloting the use of mobiles phones to improve service delivery to residents of informal settlement in a commercially viable, yet customer empowering way. It enables landlords, who pay for water services on behalf of their tenants, to send meter readings to NCWSC through their mobile phones. Upon sending the readings they receive outstanding water bills and make payments through mobile money services. Even though the new technology is currently in use only in the Kayole-Soweto informal settlement, there are plans to scale it up to other areas in Kenya.

These process innovations will be measured using sale of electricity and number of prepaid customers (utility rate) as per annum; shows the acceptability rate of customers in the process innovation in the company and the effectiveness of the process in utility bill collection. Customer accounts per employee measures employee ratio; they account for contributions completed per day on the processes in their day to day operations that is labor efficiency caused by the process service utility. Sales per employee; shows sales made per employee employed in the company and bill accuracy measuring the number of complaints and adjustments made on the processes on billing of the utilities per annum which showed customer satisfaction rate on the quality of process utility service.

1.1.2 Financial Performance

Financial performance refers to the extent to which the organization performs a relative sales value, sales growth and gross profit/profitability (Li, 2000). A firm's performance is as a result of all the organization's operations and strategies (Venkatraman and Ramanujan, 2001). Financial performance reports provide a financial summary for the company's assets, liabilities, capital, income and expense.

The financial performance of companies is usually measured using a combination of financial ratio analysis, benchmarking, budgets analysis or a mix of these methodologies (Barley, 2000). In this study, profitability ratios will be relevant and to be specific the assets and incomes will be used. Profitability analysis consists of tests used to evaluate a firm's earnings performance during the year. The ratios are of importance to long term creditors, shareholders, suppliers, employees and their representative groups. All these parties are interested in the financial soundness of an enterprise.

The ratios commonly used to measure profitability include profit margin/return on sales ratio (ROS), which tells the firm whether the pricing of goods and services is appropriately done. It shows the company's ability to earn income. It is a measure of the proportion of sales that contribute to profit. Total assets turnover/return on assets ratio (ROA), describes the percentage of profit that a company earns in relation to its overall resources (total assets). Return on assets is a key profitability ratio which measures the amount of profit made by a company per shilling of

its assets. It shows the company's ability to generate profits before leverage, rather than by using leverage.

1.1.3 Effect of Process Innovation on Financial Performance

Process innovation can be the source of competitive advantage to the innovator and at the same time can lead to sustainable increase in firm's profits (Geroski, Machine and VanReenen, 1993). Firms with intense competition and turbulent environment often rely upon innovation as a primary driver of organizational performance (Gronhaug and Kaufman, 1988). Process innovation of the prepaid power electronic service and jisomee-mita are defensive innovations. A defensive innovation is introduced to respond to changed environment or to reduce the transaction costs involved.

Main determinants of this process innovation are the technological changes, increase financial competition, price volatility to reduce exchange risk of money, reduction of debts, overhead costs and increase of asset structure on the company. The organizational and environmental drivers of innovation are unique resources capable of creating a competitive advantage within their own right through a direct linkage with financial performance.

1.1.4 Utility Companies in Kenya

Process innovation is the process of reengineering and improving internal operation of business process. This process involves many aspects of a firm's functions, including research, technical design, operational, management and commercial activities. Process innovation in terms of skills, technology, techniques, system and procedures should be emphasized by the company as its primary distinctive competence for competitive advantage. Process innovations are established to minimize operation and transaction costs associated with meter reading and billing. It empowers the customers to manage the utility bills and monitor consumption.

The Kenya Power and Lighting Company (KPLC) Limited is a utility company engaged in transmission, distribution and retail of electricity. It's a parastatal with the Kenya government owning 51% shareholding. The company was formed in 1922 and has undergone several transformations over time to the current position in which the company is solely engaged in the

transmission, generation, distribution and retail of electricity. However, in 1998 the generation function was separated from distribution function. As a result KPLC retained its name while the new electricity generating company was named Kenya Electricity Generating Company (Kengen), which generates electricity and sells it to KPLC. KPLC is 70% owned by government and 30% by public.

In 2005, the rural electrification was also hived from KPLC to form the Rural Electrification Authority (REA), which is charged with responsibility of construction of rural electricity infrastructure using the government and donor funds. In 2008, the Kenya Transmission Company (KETRACO) was also hived from KPLC. This company is charged with the responsibility of constructing new transmission lines for high tension cables of 132Kv and above.

KPLC services target the individual and corporate customers. It manages electricity networks of more than 40,000 kilometers. It operates in four regions Nairobi, Mount Kenya, Coastal and West Kenya. KPLC current business turnover amounts to more than 50 billion Kenya shillings and profits are in the range of 3-5 billion annually. Electricity sales make up the main source of revenue accounting for over 90% of the accounts receivables, where 58% are post-paid customers and 42% prepaid. Out of 3.17 million customers, about 1,331,741 are on prepaid meters as of June 2015. The prepaid system was launched about six (6) years ago in May 2009 and was piloted till February 2010, where it was introduced outside Nairobi. The two main brands of meters used are, Actaris and Conlog. This process was developed to improve on revenue collection inefficiencies and time management.

The Nairobi Water was incorporated in December 2003. It's a wholly owned subsidiary of Nairobi City County. The mandate of the company is to provide clean water and sewerage services to public. As the population grew, they made reforms to create regional water boards which were tasked with the responsibility of overseeing the operations of water and sewerage/sanitation utilities in their respective areas of jurisdiction. They include the Nyeri, Mombasa, Nanyuki and Kisumu. The josomee-ita service was launched last year May 2014 and its aim was to improve on service delivery and easy payment mode.

The utility companies use agents to act as collection points that were aimed at decongesting the company paying halls. Collection points are commercial banks, telecom companies (Safaricom-

Mpesa and Airtel- Airtel money), EasyPay e-payment module and retail outlets such as supermarkets are used to manage collected cash. This will in turn affect the financial performance of these companies which contribute a lot in the day to day running of the country's development. The customers can do a lot just through their mobile phones, such as recharge power bundles, receive e-bills, know account status reports and pay outstanding bills conveniently.

1.2 Research Problem

It is widely claimed that process innovation is positively correlated with financial performance of any organization. Only those organizations with the ability to adapt to the changing environment and adapt new ideas and ways of doing business that can be guaranteed hope of survival. Due to Mobile transfer Service, Easypay e-payment module; M-pesa and Airtel Money are well known product innovation that has led to the many process innovations from the pay-bill sub product.

There are main financial innovation services that have enabled many transactions to be effected easily and with ease wherever, whenever. Due to these product services, the prepaid power electronic process has been made possible. The service has a card that is used to re-charge the electronic device for energy services. Due to its ease and efficiency, it has had a large impact on financial performance as compared to prior postal bill invoices. The online prepaid services offered makes it easy to know ones meter and pay it with ease avoiding long queues, enable accountability of payments made to users accounts, landlord-tenant utility wrangles, wrongly made invoices and late payment disconnections due to late delivery of bills to the consumer of the utility supply. All these factors ultimately affect the performance of the firms and the profitability.

Numerous scholars have performed empirical studies to test the theory on how innovations affect financial performance; Koellinger (2008) analyzed the relationship between the usage of internet-based technologies, different types of innovations and performance of the firm level in European enterprises. Antonio et al (2010) determined the links between innovation capabilities and business performance, a survey study of manufacturing firms. Muchoki (2013) studied the effects of product innovation on financial performance of mobile telephony firms in Kenya.

Mureithi (2013) studied the effects of mergers and acquisitions on financial performance of the commercial banks in Kenya and lastly. Hanen et al (2010) analyzed the impact of the innovation activities on the performance of the Tunisian service firms in terms of productivity, sales growth and employment growth.

Previous researches show that there is a strong relationship between innovations and financial performance of various organizations. Due to the differences in sector, industry and organizations where research have been conducted, it's should not be assumed that the same effects will be on all. Since Kenya Power and Lighting Company is a monopoly in power supply, the effects of process innovation on their financial performance may differ. Innovations in utility sector are adopted to be able to adapt to the changing environment. One of the main objectives of a company is customer focus and at the same time to be profitable.

Utilities such as water and electricity are essential aspects in peoples' lives and businesses. Due to this, the country's economy is also affected in terms of development and sustainability capability. Innovations need a lot of investment to be invested in them in terms of finances, infrastructure and labor. Process innovations are developed to improve the company's services to its customers and improve the company's operational and financial aspects. It's why the study is seeking to answer the following research question: What is the effect of their process innovations on the financial performance of in utility companies in Kenya: A case study in Kenya Power and Lighting Company?

1.3 Research Objective

To determine the effect of process innovations on the financial performance of the Kenya Power and Lighting Company

1.4 Value of the Study

The finding of this study will assist in confirming that the process innovation highly affects the financial performance of the utility sector. It will assist the management to appreciate the

importance of innovation especially in a competitive and ever changing environment. It will help the management of firms to make decisions on future innovations and re-engineering of the current innovations.

Further this study will assure the investors of the utility firms' that their monies are invested in a good product and that future dividends are guaranteed, since KPLC is a listed company in the Nairobi Stock Exchange and that the company is a stable to invest more in. It will also help to assure the employees that their jobs are secure, and the government to support initiatives that improve the economy as a whole and upgrade living status of the public in general.

The students, consultants and researchers will use the study as a guide or for information purposes or further research areas. The students will do more research on it for academic pursuits, the consultants and researchers could use the information to provoke more research for consultancy services to top management of interested companies or any upcoming companies in the utility sector.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a discussion on the relevant literature on process innovation and financial performance and identifies the gap to be addressed by this study. Among the issues to be discussed are theories in relation to innovations, review of the empirical studies and finally conclusion.

2.2 Theoretical Review

The theories to be discussed are: diffusion of innovations theory, translation theory, actor – network theory, and technology acceptance model.

2.2.1 Diffusion of Innovation Theory

Diffusion of Innovation (DOI) is based on the notion that adoption of an innovation involves a spontaneous or planned spread of new ideas. Rogers (1995) stresses that it is the perception of change that is important: if the idea seems new to the potential adopter then it should be considered to be an innovation. In diffusion theory the existence of an innovation is seen to cause uncertainty in the minds of potential adopters (Berlyne, 1962), and uncertainty implies a lack of predictability and of information. Diffusion is considered to be an information exchange process amongst members of a communicating social driven by the need to reduce uncertainty (Rogers 1995). Uncertainty is the degree to which a number of alternatives are perceived in relation to the occurrence of some event, along with the relative probabilities of each of these alternatives occurring. Those involved in considering adoption of the innovation are motivated to seek information to reduce this uncertainty.

The DOT theory contends that a technological innovation embodies information, and so its adoption acts to reduce uncertainty. There are thus four main elements of any theory of innovation diffusion: characteristic of the innovation itself, the nature of the communication

channels, the passage of time and the social system through which innovation diffuses (Rogers, 1995). He argues that the attributes and characteristics of innovation itself are important in determining the manner of its diffusion and the rate of its adoption. Borrowing from the work of Thomas and Znaniecki (1927) he notes that it is what potential adopters perceive to be the attributes of an innovation that is the important thing.

In the case of technological innovations, Rogers (1995) outlines two components to be considered: a hardware aspect consisting of a tool that embodies the technology as a physical object and a software aspect comprising of tool's information base. Rogers notes that although the software component of a technology is sometimes not easy to observe technology almost always represents a mixture of hardware and software aspects. Rogers outlines five important characteristics of an innovation which he argues affects its diffusion: relative advantage, comparability, complexity, trial ability and observe ability.

Rogers (1995) argues that time is involved in three aspects of innovation diffusion: the innovation decision process, the degree of innovativeness and the innovation rate of adoption. He outlines five main time dependent steps in innovation-decision process that the adopter must pass through as: knowledge, persuasion, decision, implementation and confirmation. It was also found that different individuals in a social system do not necessarily adopt an innovation at the same time.

In the innovation diffusion paradigm diffusion occurs within a social system in which the social structure constitutes a boundary. It's in this boundary that innovation diffuses. Technology is a product of the society, and is influenced by the norms and values of the social system (Rogers, 1995). He maintains that idea only innovation which does not have a material referent, its social construction though interpersonal communication with others is very important.

2.2.2 The Theory of Innovation Translation

Approaches to this theory state that only the most appropriate innovations are adopted and that only those sensible people who make these adoptions go on to prosper, assume that all outcomes of technological change are attributes to the 'technological' rather than the 'social' (Grint and Woolgar, 1997).

Most of the essentialist versus the anti-essentialist debate has been about the presence, or otherwise the essence in humans, but this debate has extended to non-humans. Grint and Woolgar (1997) contend that most views of technology attribute an “essential inner core of technical characteristics” to the non-human elements, while portraying the human elements as secondary and transitory. Objecting to any implicit endowment of inherent properties in the technology they propose that many other factors need to be taken into account in order to understand the impact of the technology.

The other aspects include: our attitudes towards technology, our perceptions of what technology can and cannot do, our expectations and assumptions about the possibilities of the technological change and the various ways in which technology is represented in the media and in organizations (Grint and Woolgar, 1997). They maintain that technology is best thought of being constructed entirely through human interpretation. They reinstated the difficulty of sustaining the idea of a boundary between humans and non-human actors, and said its best thought as linked together in some kind of network rather than as separate systems.

2.2.3 Actor-Network Theory

Actor Network Theory (ANT) adopts an anti-essentialist position in which it rejects there being some differences between humans and non-humans (Latour et al, 1992). It considers both social and technical determinants to be flawed and instead proposes a social-technical account, in which neither social nor technical positions are privileged. In this socio-technical order nothing is purely social and nothing is purely technical (Law, 1992).

To address the need to treat both human and non-human actors fairly and in the same way, ANT is based upon three principles: agnosticism, generalized symmetry and free association (Callon, 1986). Agnosticism means that analytical impartiality is demanded towards all the actors involved in the project under consideration, whether they may be human or non-human. Generalized symmetry offers to explain the conflicting viewpoints of different actors in the same terms by use of an abstract and neutral vocabulary that works the same way for human and non-human actors. Neither the social nor the technical elements in these ‘heterogeneous networks’ (Law, 1992) should be given any special explanatory status. Finally the principle of free

association requires elimination and abandonment of all a prior distinctions between the technological or natural and social (Callon, 1986: Singleton and Michael, 1993)

ANT was developed to analyze situations that are difficult to separate humans and non-humans, in which the actors have variable forms and competencies. In the actor-network theory, an actor is made up only of its interactions with these other factors (De Vries, 1995) and it notes that an actor thus consists of an association of heterogeneous elements constituting a network of interactions (Callon and Latour, 1986).

2.2.4 The Technology Acceptance Model

The Technology Acceptance Model (TAM) is a theoretical model that evaluates the effects of things like system characteristics of user acceptance (Davis, 1986). TAM assumes that a computer user generally acts quite rationally and uses information in a systematic manner to decide whether to adopt, or not to use the new technology in the workplace. There are three determinants of technology acceptance that relate to cognition and effectiveness. They are perceived ease of use, attitude towards technology and behavioral intention to explain technology adoption (Davis, 1986).

2.3 Determinants of Financial Performance

Financial performance is a measure of an organization's earnings, profits, appreciations in value as evidenced by the rise in the entity's share price. Utility companies' profitability is influenced by both internal and external factors. Internal factors focus on company's specific characteristics. The external factors concern on both industry features and macro-economic variables. These include;

2.3.1 Corporate Governance

Corporate governance practices are structures and behaviors that guide how a business entity sets its objectives, develops strategies and plans, monitors and reports its performance and manage its risk (Reddy, 2010). There are two models of corporate structure shareholder model and stakeholder model. Shareholder model focuses on the wealth creation of owners while

stakeholder model covers broader aspects and concerns the welfare of all stakeholders and overall firm performance. There are five principles of corporate governance (Bocean, 2001) and these are; protection of shareholders' rights, equitable treatment of shareholders, protection of stakeholders' rights, proper disclosure and transparency and fulfillment of responsibilities by board (Mirza and Javed, 2013).

2.3.2 Age of the firm

As a firm continues longer in business, it establishes itself as an ongoing business and therefore increases its capacity to take on more debt. Older firms are more experienced, have enjoyed the benefits of learning, are not prone to liabilities of newness, and therefore can enjoy superior performance. Older firms may also benefit from reputation effects, which allow them to earn higher margin on sales. Hence they can be granted good loans on their projects which have promising profitable outcomes. The investors will receive good returns since the financial performance will be improved (Mirie and Mirugi, 2015).

2.3.3 Firms Size

Large firms are more diversified and hence lower variance in earnings, making them able to tolerate high debt ratios. Large firms attract better managers and workers who in turn contribute to the performance of the firm. This is because both firm and its people support each other's goals. Smaller firms, on the other hand, may find it relatively more costly to resolve information asymmetries with lenders. Due to this the financial performance of large firms is more stable and efficient as compared to smaller firms since they can exploit economies of scale and scope (Mirie and Mirugi, 2015).

2.3.4 Ownership Structure

Ownership structure of the firm has a great impact on the performance of the firm. Concentrated ownerships and institutional ownerships lead to better control and monitoring of board of directors and somehow force them to undertake profitable strategies to ensure future earnings. However small shareholdings by public do not support long term plans, these owners are mostly interested in the short term profits and not overall growth of the company and in the same case

for small or no internal ownership. Ownership structure should be carefully balanced for the firm to perform well (Mirza and Javed, 2013).

2.3.5 Asset Structure

Assets are in terms of tangible/fixed assets, investments and current assets. The degree to which the firm's assets are tangible determines the liquidity value of the firm. Firms which invest heavily in tangible assets have a higher financial leverage and hence the long term good financial performance than those who invest less on tangible assets. The high liquidity value leads them to access finances at lower costs and easily hence having an easy task in improving performance since finances are available (Mirza and Javed, 2013).

2.3.6 Firm's Risk Management

Risky firms tend to attract only risk taking investors. These risks are both business and financial risks. The relationship of risk and returns has to be managed so that the investors do get the return associated and expected with the risk they are bearing. Firms with more volatile earnings growth may experience more situations in which cash flows are too low for debt service. Firms with high degree of business risk have less capacity to sustain financial risks and thus use less debt (Mirza and Javed, 2013).

2.3.7 Location

Firms close to capital city or urban centre would have easier access to finances than those located outside the capital city. Firms in the capital city there are many financial institutions to acquire financial help from than those outside the major cities. Most banks have branches in the major cities. Also the major cities have more market opportunities of the firm's services as compared to rural areas. Better location therefore affects financial performance of the firm (Mirza and Javed, 2013).

2.3.8 Capital Structure

Every firm requires a substantial amount of resources, whether land, labor or capital employment and finances. These finances can either be generated internally (retained earnings), or hired from outside sources (loans and bonds). The decision of selection of the source of finance is based on

the costs (monetary or non-monetary) associated with them and capital structure itself. Capital structure refers to the ratio of debt and equity financing. High ratio of debt leads to high financial performance (Mirza and Javed, 2013).

2.4 Empirical Review

Empirical studies are studies based on observed and measured phenomena and derives knowledge from actual experience rather than from theory or belief. Here is where researchers collect data in order to assess whether a certain theory or relationship holds or doesn't hold.

2.4.1 International Evidence

Shirley and Sushanta (2006), studied the impact of information technology on banking industry, especially on how it will affect the bank's profits. The study was done on 68 US banks for a period of over 20years. It was found out that the relationship between information technology expenditures and bank's performance is conditional to network effect. They say that if the network effect is too low, IT expenditures are likely to; reduce payroll expenses, increase market share and increase revenue and profit.

Koellinger (2008) analyzed the relationship between the usage of internet based technologies, different types of innovations and performance at the firm's level. The study period was year 2003, with an objective to find how much is innovation enabled by IT and its relation to performance. A sample of 7302 European enterprises was used, applied regression model used for analysis. Results stated that internet based innovations are most likely to grow than non-internet based.

Antonio et al. (2010) set out to determine the links between innovation capabilities and business performance. The period under review was 2007-2009, a survey study of 200 manufacturing firms in Hong Kong/ Pearl River Delta region. Structural equation was employed to examine the relationships among Technological Innovations Capabilities (TICs) and various performance indicators. Pearson correlation and regression analysis were employed. Results revealed that different TICs have different impacts on different performance measures. Organization capability was found to be most influential impact.

Hanen, Mohammed and Moez (2010) analyzed the impact of the innovation activities on the performance of the Tunisian Service firms in terms of productivity, sales growth and employment growth. The sample was 71 service firms having a significant value added services for the period 2007-2009. Data was collected through a questionnaire and the Heckman's two-stage econometrical model was used to analyze the data. Results showed that innovation had a significant effect on the productivity and employment growth.

Mabrouk and Mamoghli (2010), in their study on dynamics of financial innovation and performance of banking firms; context of an emerging banking industry, analyzed the effect of the adoption of two types of financial innovations namely; product innovation (telephone banking, sms banking) and process innovation (magnetic strip cards-ATMS, debit, credit), Automated cash dispenser, Electronic payment terminal on the performance of banks. They found out that first mover initiative in product innovation improves profitability while process initiative has a positive effect on profitability and efficiency of banks performance. Bank that imitate are less profitable and less efficient than first movers.

Mascia and Luca (2010) performed an empirical analysis of the innovation –performance relationship among the 4325 Italian Manufacturing firms during the years 2004-2006. Data was obtained from the Unicredit Group Survey, to which linear modeling was used to explain return on asset in terms of innovation strategies. Results showed that there was a weak but significant relationship between return and innovation.

Mirza and Javed (2013) performed a study on determinants of financial performance among the Pakistani Stock market. The study examined performance of firms listed in Karachi Stock Exchange for the period of 2007-2011 and attempted to explain the observed behavior with help of fixed effect model. The results supported the potential association between firm's financial performance and economic indicators, corporate governance, ownership structure and capital structure that there was a relationship but the intensity of relationship differs across different measures of performance. There was a positive association existing between corporate governance and risk management while mixed results are observed for economic condition, ownership structure, capital structure and firm characteristics and policies.

Zaied et al. (2015) did a study on relationship between organizational innovation, internal sources of knowledge and organizational performance. This study researched on a sample of 200 Tunisia companies operating in different sectors. Data was collected using self-administered questionnaires in a survey. The result was that there was no relationship between internal and external sources of knowledge with organizational innovation and organizational performance. This was because Tunisian companies do not have specific departments to research and development and there was lack of investment in innovation.

2.4.2 Local Evidence

Kihumba (2008) did a study on the determinants of financial innovation and its effects on bank performance in Kenya for the year 2000-2007. Analytical model was used and diagnostic tests done to determine the relationship between the variables. Findings were that there was a positive relationship between the two variables.

Kariuki (2011) examined the relationship between the level of technological innovation and financial performance of the Kenya commercial banks. The study covered years 2001-2010, where the qualitative and quantitative data was collected and analyses using content analysis and SPSS version 17 respectively. Finding revealed that commercial bank in Kenya have continuously employed various technological innovations which have led to increased financial performance through bank sales, return on equity and profits.

Maiyo (2013) analyzed the effects of electronic banking on financial performance of the commercial banks in Kenya. The study was done on all commercial banks on data from 2008-2013. The data was analyzed using the SPSS and Ms Excel and analyzed using the ANOVA technique. It was concluded that commercial banks have highly implemented electronic banking though the adoption of internet has been slow due to impaired availability of infrastructure and lack of supportive legislature of the internet banking.

Muchoki (2013) analyzed the effects of product innovation on financial performance of the mobile telephony firms in Kenya. The study was done on revenues collected from 2008-2012 of the 4 mobile phone service providers. The data was collected and analyzed using multiple regression analysis. T-statistics and also F-test were also used together with the MS Excel

Version 2007. Results were that the product innovation was positively correlated to return on assets among the mobile companies in Kenya.

Mureithi (2013) analyzed the effects of mergers and acquisitions on financial performance of commercial banks in Kenya. The study was done on profitability, solvency and capital adequacy ratios of pre and post-merger of commercial banks. T-test was used to analyze the data collected. Results were that there was improvement in financial performance after the mergers of the commercial banks.

Adhiambo (2014) analyzed the effects of product innovation on financial performance of commercial banks in Kenya. The study did on products such as introduction of insurances, prestige banking, retail banking and credit cards in commercial banks in Kenya. ANOVA and multiple regressions were used to analyze and interpret the collected data. Formal product innovations had a negative impact on financial performance and it was also not clear enough if they influence profit margins.

Njogu (2014) did a study on the effects of innovation of financial performance of manufacturing small and medium enterprise in Nairobi County. Demographic characteristics, net income and total assets and innovation data for 2011-2013 were collected and analyzed using the regression and ANOVA methods. The finding was that innovations are crucial to performance of SMEs. There was a positive relationship between market, product and process innovations with financial performance.

2.5 Summary of the Literature Review

The theories stated shows relationship between innovations and financial performance of various organizations. As we see in the empirical evidences for example in Njogu, (2014) who investigated the effects of product, market and process innovations on financial performance in Manufacturing SMEs. The study conclusion was that there was a positive relationship between the variables and financial performance. Shirley and Sushanta, (2010) they studied on the impact of information technology on banking industry, and its effects on bank's profits in the US banks. Muchoki, (2013) who studied on the effects of product innovations on financial performance of

the mobile telephony firms in Kenya and the findings were that the product innovation was positively correlated to return on assets.

However we need to investigate the specific effect of process innovation on the financial performance at the Kenya Power and Lighting Company. This is because most previous empirical studies as above examples were done on US commercial Banks, SMEs in Kenya, mobile telephony firms in Kenya. All these contexts face different factors and also deal with different process innovation services therefore it's true to state that a study on the process innovations affecting financial performance in utility firms in Kenya has not been done. And as we know utility firms have many challenges, a big market to serve and the process innovations introduced play a big role in financial performance. This study will fill a research gap by identifying the relationship of process innovation on financial performance in the Kenya Power and Lighting Company.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter highlights the techniques and design that the researcher used to carry out the research. It included research design, study target population, data collection and data analysis techniques.

3.2 Research Design

The study used descriptive research design. A descriptive research design determines and reports the way things are (Mugenda & Mugenda, 2003). The design also had enough provision for protection of bias and maximized reliability (Kothari, 2008). Descriptive research is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals (Orodho, 2003). Descriptive statistics tells us what was, while inferential statistics determines cause and effect. Descriptive research gathers data that describe events and organizes, tabulates, depicts and describes the data collection. Intent of descriptive research was to produce statistical information that led to important recommendations. The study was based on Kenya Power and Lighting Company.

3.3 Data Collection

The study used secondary data on the process on its characteristics, sale of electricity, number of prepaid customers rate per annum, complaints and adjustments on payments rate per annum and customer and sales (kWh) per employee. Secondary data was sourced from various audited financial publications for the financial year 2005-2014. Diverse sources in the form of articles, books, statistical data, professional education journals and annual company reports was used to collect data. The secondary data collected was on total assets, net income and debt ratios.

3.3.1 Data Validity and Reliability

Validity refers to the degree to which a measuring instrument measures what it is supposed to measure (Nachmias, 1996). Some questions could cause problems and questionnaire testing is necessary to identify and eliminate these problems. To do so a pilot study should be done on knowledgeable respondents in the field to test the questions relevance, comprehension, meaning and clarity. The unclear statements, questions or indicators will be modified accordingly. What will be considered is sample size, value of information in the study and cost of the sample.

Reliability refers to the extent to which findings can be replicated by another researcher (Saunders, 2009). To test the internal consistency of the items listed on the instrument used, the Cronbach's alpha coefficient was computed. Cronbach's alpha is a statistical coefficient (a value between 0 and 1) that is used to rate the reliability of an instrument such as a questionnaire. This method randomly splits the data set into two and a score for each participant is calculated from each half of the scale. The advantage with using Cronbach's alpha is that data is split into every possible way and correlation coefficient for each split computed. The average of these coefficients is the value equivalent to its alpha.

3.4 Data Analysis

The data collected was analyzed using descriptive statistical techniques, where SPSS and Microsoft excel statistical tools will be used. This is the part where we used tables, charts to present the data. A 10-year data was analyzed on the firm before and after the prepaid process innovation. The study was to determine the effect of process innovations on financial performance in the Kenya Power and Lighting Company. The multivariate regression analysis was used to analyze the data to establish the effect of independent variables to dependent variable. Correlation analysis was used to measure the strength of the relationships between the variables.

3.4.1 Analytical Model

The following analytical model was used in analyzing the relationship between the dependent and independent variables:

$$Y=\alpha+\beta_1X_1+\beta_2X_2+\beta_3X_3+\varepsilon$$

Where α = a constant to be estimated, β =beta coefficients of variations in independent variables and ε =error or random term

Y_1 =Financial performance measured by return on assets;

X_1 =Process innovation (measured by customer complaints and adjustments in prepaid payments, customer/employee rate, sale of electricity, sales in (kWh)/employee and number of prepaid customers),

X_2 = Asset structure (size of the company measured by total assets),

X_3 =Capital Structure (measured by debt ratio)

3.4.2 Test of Significance

In this study the significance level was 5% which makes the confidence level to be 95%. The coefficient of determination R^2 and correlation coefficient R showed the degree of association between the effects of adopting process innovation and performance of utility companies in Kenya, determining the strength of relationship. The findings were generalized to population of interest. ANOVA as a statistical tool was used in determining the variance among the grouped data for statistical significance in determining the impact of independent variable in a regression analysis.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND INTERPRETATION

4.1 Introduction

This chapter presents the results of the analysis of the data obtained through various analysis techniques. As indicated in the research design, due to the nature of the study quantitative data has been used. The data obtained from the study has been clearly tabulated, analyzed and presented using SPSS version 18.0, analytical tool

4.2 Descriptive Statistics

Descriptive statistics was used to describe the basic features of the data in a study. It provided a summary about the population and measures used. It entailed use of central tendency and tables as shown below

Table 4.1 Descriptive Statistics

Variables	Mean	Std. Deviation
Utility usage rate/number of prepaid customers	214,062.33	228,940.83
Sale of electricity	36,504,286.83	13,631,847.69
Customer per employee rate	182.08	44.21
Sales(kWh) per employee rate	689,947.60	65,850.42
Complaints & adjustments on payment rate	1,873.67	382.59
Asset structure	99,277,204.30	63,873,699.64
Debt ratio	0.6051	0.09864
Return on assets	0.0353	0.00835

Source: Research Findings

The results of the analysis on table 4.1 showed that the process innovation measure aspects of utility usage rate or number of prepaid customers of mean= 214,062.33 and standard deviation= 228,940.83; sale of electricity mean= 36,504,286.10 and standard deviation = 13,631,847.68;

customer per employee rate mean= 182.08 and standard deviation 44.21; sales (kWh) per employee mean= 689,947.60 and standard deviation = 65,650.4169 and lastly complaints and adjustments on prepaid payment mode mean= 1873.67 and standard deviation= 382.59. In all these independent variables for process innovation the study excluded complaints and adjustments on payments per year on prepaid service and number of prepaid customers since the data collected was not on all the 10 years of study. The asset structure of the company with a mean = 99,277,204.30 and standard deviation = 63,873,699.64. The debt ratio of the company with a mean = 0.6051 and standard deviation= 0.09864. The result shows that the Kenya Power and Lighting Company return on assets mean= 0.0353 and standard deviation =0.00835.

4.3 Inferential Statistics

Inferential statistics involves generalizing from a population to make estimates and inferences. This was explained using correlation analysis, regression analysis and analysis of variance (ANOVA).

4.3.1 Correlation Analysis

Before running the regression model, correlation analysis was conducted. Correlation matrix showed the relationship or association between the dependent variable and independent variables. In the study we found out that there is a positive correlation of 0.985 between sale of electricity and number of prepaid customers, 0.974 between customer per employee and sale of electricity and 0.263 between complaints and sale of electricity variables. There is a negative correlation of -0.564 between sale per employee and customer per employee, -0.234 between assets and complaints and -0.621 between debt and total assets as shown in table 4.2 below. It is evident that not all independent variables had a correlation coefficient of more than 0.8 which implies severe multicollinearity. This meant that researcher can predict one variable from combination of other variable.

Table 4.2 Pearson Correlation Analysis

	Prepaid Customer	Sale of electricity	Customer/employee rate	Sale in kWh/employee rate	Customer complaints & adjustment in prepaid payments	Asset Structure	Debt ratio
Prepaid Customer	1**	0.985	.960**	-0.558	-.010**	0.964	.054**
Sale of electricity	.985**	1**	.974**	-0.675	.215**	.954**	.686**
Customer/employee rate	.960**	.974**	1**	-0.564	-.031**	.933**	.776**
Sale in kWh/employee rate	-.558*	-0.675	-.564*	1	.263*	-0.759	-.265*
Customer complaints & adjustment in prepaid payments	-0.01	0.215	-0.031	0.263	1	-0.234	-0.5
Assets Structure	.964**	.954**	.933**	-0.759	-.234**	1**	.621**
Debt ratio	.054*	.686*	0.776	-0.265	-.503*	.621*	1

Source: Research Findings

4.3.2 Regression Analysis

The results as shown on table 4.3 below sought to establish if there was a relationship between process innovation and financial performance in utility companies in Kenya. It showed the degree of which process innovation, asset structure and debt ratio are related to return on assets of Kenya Power and Lighting Company. The regression analysis model showed that there was a positive correlation coefficient (r) = 0.978 and co-efficient of determination (r^2) = 0.957 and adjusted r of 0.903

The results of r^2 implied that the variations of process innovation, asset structure and debt ratio explained 95.7 % of the variations in Kenya Power return on asset. The rule of thumb is that usually co-efficient of determination of more than 50% is considered as better. Since for the study it is 95.7 % which is more than 50% it implies that the factors included in the model are sufficient.

Table 4.3 Model Summary

Model Summary							
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.978 ^a	.957	.903	.25969	.957	17.808	5

Source: Research Findings

The regression model was

$$ROA = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$$

The results of the study were

$$ROA = 1.470 + 1.752X_1 - 3.750X_2 - 1.183X_3 + \epsilon$$

The table 4.4 below show that process innovation (sale of electricity) have positive co-efficient and assets structure and debt ratio have negative co-efficient. We can also see that the sale (kWh) per employee and customer per employee rate per year is not significant to this regression model. It states that in all the process innovation measure aspects only the sale of electricity affects the return on assets in Kenya Power and Lighting Company. From the whole model the only independent variables that affect the return on assets in Kenya Power and Lighting Company were sale of electricity and assets structure. Therefore, taking all the independent variables constant at zero, unit increase in process innovation, asset structure and debt ratio led to 1.752, -3.750 and -1.183 unit increase in utility company’s ROA respectively. The results of the study further indicated that p-value of 0.013 for process innovation, 0.004 of asset structure were less than significance level of 0.05 and 0.522 of debt ratio was more than significant level of 0.05. The implication of these results is that there was positive relationship between process innovation (sale of electricity) and asset structure with utility firms return on assets whereas there was negative relationship with debt ratio.

Table 4.4 Co-efficient correlation Table

Co-efficients						
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations
	B	Std. Error	Beta			Zero-order
(Constant)	1.470	1.736		.847	.445	
Sale in kWh/employee rate	1.688E-006	.000	.133	.571	.599	.590
Asset structure	-3.750E-008	.000	-2.868	-5.852	.004	-.616
Debt ratio	-1.183	1.686	-.140	-.702	.522	-.233
Sale of electricity	1.752E-007	.000	2.861	4.241	.013	-.363
Customer/employee rate	-.006	.016	-.309	-.375	.727	-.382

Source: Research Findings

4.4 ANOVA Interpretation

The findings as on table 4.5 below shows analysis of variance which was used to test the significance of the regression model as pertains to differences in means of dependent and independent variables. The ANOVA test produced an F-value of 17.808 which is significant at $p=0.008$. Thus the regression model is statistically significant in predicting how process innovation, asset structure and debt ratio affect financial performance.

Table 4.5 ANOVA Table

ANOVA					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	6.005	5	1.201	17.808	.008
Residual	.270	4	.067		
Total	6.275	9			

Source: Research Findings

4.5 Interpretation of the Findings

This study investigated the effect of process innovation on financial performance in Kenya Power and Lighting Company. The process innovations that were studied were the prepaid service for Kenya Power and Lighting Company. Process innovation indicators were number of prepaid customers, sale (kWh) per employee, sale of electricity, customer per employee rate, complaints and adjustment rate on payments per annum plus control variables of asset structure and debt ratio. Financial performance indicator was the return on assets (ROA).

The results of the study indicated that there is a positive relationship between process innovation (sale of electricity) and financial performance in Kenya Power and Lighting Company as reflected by positive co-efficient of 1.752 and probability value of 0.013. The results of the study agrees with those of Laforet (2006) who established that innovation contributes to increase in sales revenue, market share, efficiency, customer loyalty and firm's profitability. The findings of the study add to findings of Baker (2002) who established that product/service innovation was oriented toward improving the features and functionality of existing products and services or creating wholly new products/services and in this way utility companies can reinforce their competitiveness and increase their profitability.

The study had mixed results on the process innovation variable as a whole with financial performance of KPLC. The positive coefficient 1.752 indicates that any increase in the sale of electricity caused by the process innovation will lead to an increase on return on assets, which is a financial performance indicator. This shows that the financial performance will increase in increase of sale of electricity. The number of prepaid customers and complains and adjustments will not affect the financial performance of KPLC. The process measures of sales (kWh) per employee and customer per employee are not statistically significant in affecting the financial performance of KPLC. This was shown in the p values of 0.599 and 0.727 respectively which are higher than 0.05 significance level used in its data analysis. Despite the positive coefficient of 1.688 sales (kWh) per employee and negative coefficient of -0.006 for customer per employee, both are not statistically significant to financial performance of KPLC.

The study indicated that there is a negative relationship between asset structure and financial performance in Kenya Power and Lighting Company as reflected by negative co-efficient of -

3.750 and probability value of 0.004. This means that an increase in asset structure of KPLC will lead to a decrease in return on assets, the financial performance will decrease. The p value of 0.004 showed that asset structure of KPLC is statistically significant in determining the financial performance of the company. Therefore the composition of the company's assets should be carefully noted because it affects the financial performance of the utility company.

The study indicated that there is a negative relationship between debt ratio and financial performance in Kenya Power and Lighting Company as reflected by negative co-efficient of - 1.183 and probability value of 0.522. This means that an increase in debt ratio of KPLC will lead to a decrease in return on assets, the financial performance will decrease. The p value of 0.522 showed that asset structure of KPLC is statistically not significant in determining the financial performance of the company, since its significance level is above 0.05. This has concurred with Capon et al. (1990); Chandler and Hanks (1994) in their studies that found that there is a negative link or no link at all between debt ratio and financial performance of KPLC. However, this is contrary to the findings of Zahra and Sidhartha, (1993) that concluded that both product and process innovation contributes to performance of an organization.

The results of the study showed positive coefficient of determination of 0.957 implying that process innovation, asset structure and debt ratio explains variations of 95.7% in KPLC return on assets. In conclusion there is not a clear view if process innovation affects financial performance because sale of electricity affects financial performance positively while customer and sales (kWh) per employee does not financial performance totally. The asset structure affects the financial performance negatively in line with results conducted by Gurbuz et al. (2010) where the liquidity of firm's assets will negatively influence financial performance. Debt ratio does not significantly affect financial performance of Kenya Power and Lighting Company.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This section of the study summarizes the findings, draws conclusions and also gives recommendations based on the findings of the study.

5.2 Summary

The study targeted the Kenya Power and Lighting Company, which has process innovation of the prepaid power service. But due to unavailability of data from Nairobi Water the study was only done in KPLC. The other utility companies are small companies and don't have process innovations in their companies or they have just introduced one like in the Nairobi Water and Sewerage Company with jisomee-mita water reading service as at June 2014. A case study was done on Kenya Power and Lighting Company before and after the process innovation from 2005-2014.

There are mixed relationship between process innovation as a whole and financial performance of KPLC. The positive coefficient 1.752 indicates that any increase in the sale of electricity caused by the process innovation will lead to an increase on return on assets, which is a financial performance indicator. This shows that the financial performance will increase in increase of sale of electricity. The number of prepaid customers and complains and adjustments will not affect the financial performance of KPLC. The process measures of sales (kWh) per employee and customer per employee are not statistically significant in affecting the financial performance of KPLC. This was shown in the p values of 0.599 and 0.727 respectively which are higher than 0.05 significance level used in its data analysis. Despite the positive coefficient of 1.688 sales (kWh) per employee and negative coefficient of -0.006 for customer per employee, both are not statistically significant to financial performance of KPLC.

The results showed that there is a negative relationship between asset structure and financial performance in Kenya Power and Lighting Company as reflected by negative co-efficient of -3.750 and probability value of 0.004. This means that an increase in asset structure of KPLC will lead to a decrease in return on assets, the financial performance will decrease. The p value of 0.004 showed that asset structure of KPLC is statistically significant in determining the financial performance of the company. The study also indicated that there is a negative relationship between debt ratio and financial performance in KPLC as reflected by negative co-efficient of -1.183 and probability value of 0.522. This means that an increase in debt ratio of KPLC will lead to a decrease in return on assets, the financial performance will decrease. The p value of 0.522 showed that debt ratio of KPLC is statistically not significant in determining the financial performance of the company, since its significance level is above 0.05.

5.3 Conclusion

This study reported on the effects of process innovation on financial performance of Kenya Power and Lighting Company, a 10 year secondary data was analyzed, before and after the introduction of process innovation. From the study it is evident that the process innovation has affected the sale of electricity in which an increase of sale electricity leads to an increase of financial performance of KPLC. The process innovation measure aspects of number of prepaid customers and prepaid complaints and adjustments on payment were not significant to the study since they affected only after the process innovation and data available was for few years. Customer and sales (kWh) per employee measure of process were found not to be significant to return on assets of KPLC.

There was a negative relationship between asset structure and financial performance in Kenya Power and Lighting Company as reflected by negative significant co-efficient. This meant that an increase in asset structure of KPLC will lead to a decrease in return on assets, the financial performance will decrease. The study also indicated that there is a negative relationship between debt ratio and financial performance in KPLC as reflected by negative co-efficient. This showed that debt ratio of KPLC is statistically not significant in determining the financial performance of the company

In conclusion there is not a clear view if process innovation affects financial performance because sale of electricity affects financial performance positively while customer and sales (kWh) per employee does not financial performance totally. The asset structure significantly affects the financial performance negatively while debt ratio does not totally affect financial performance of KPLC.

5.4 Policy Recommendations

The following are the recommendations emanating from the findings of this study: Since technological innovation is aggressively and continuously adopted in Kenya, the government should provide incentives for research and development to researchers who would continue to invest their time and skills in discovering more utility process innovations. It is recommended that the government also pursues a strategy to provide incentives for technology transfer from more developed economies in order to promote adaptation of world class utility innovations which will boost the utility process innovations that improve utility service delivery in the utility sector.

Managers and employees of the utility sector should invest time, effort and resources towards innovations that are relevant and compatible to their services. This will lead to effective and accurate revenue collection system, reduced queues in paying points, accurate invoicing of the utilities, satisfied clients (residential and commercial) and effective cost cutting and allocating the saved funds to other needy uses in the companies. This will highly affect competition survival of the companies in the ever changing environment needs.

The customers of the utilities are very concerned of the utility service delivery of utilities since water and electricity are essential aspects of country's growth and development. Despite innovation being very helpful to the company there is a security aspect arising in the minds of customers. They want to be assured that when they make payments in any paying points to settle a utility bill and that it is reflected to the right account number and that it reaches the company's real account and not to another company's account. This is more so when the payment is done through MPESA or Airtel Money or Easy pay. The initiators therefore need to create enhanced and effective security systems to detect, prevent and manage frauds on the paying points.

The growth rate of the process innovation is very slow. The pilot is usually done in Nairobi and connectivity potential is so slow to the rural areas. The managers and employees are required to do more in introducing the prepaid process innovation to the rural areas so as to improve the accessibility rate. More marketing and training on the prepaid power service in the rural areas.

5.5 Limitations of the Study

While conducting this research, there was some reluctance in being allowed to get the required data. The process of being allowed by the utility companies to get the data was very long and was it was not guaranteed that they will allow for me to access the company's data. Some of the data needed was incomplete due to lack of systems and due to the short time given to collect data there was a challenge of getting enough time to analyze the many files in archives. The Nairobi Water and Sewerage Company data was very insufficient as at June 2014 and therefore there was not enough data to be studied on.

Utility sector is a very crucial sector in the economy and any process innovations introduced will impact the financial performance in one way or the other either through increases profits, sales or to be able to survive competition in the changing environment. Many of the utility companies were small companies and they have no enough funds to develop or purchase a process innovation which lead to a small representation of the utility companies in the study. This led to reduced population for the study.

The location of the headquarters was very far and costly in terms of fare each time data is collected and telephone charges were high due to constant calling to the companies to inquire if the authority to collect data was given. Due to a short time given to collect data this was done constantly and lead to high data collection charges for the study. The employees of the companies were not comfortable to give data and sometimes very unkind in giving response on the situation of the progress of the approval data collection letters. The late response data collection approval led to last minute rush of data collection and this led to body fatigue.

5.6 Suggestions for Further Studies

Further research needs to incorporate a wider scope of the utility companies in Kenya. This will increase the population size and results will have a better representation of the sector in terms of process innovation affecting financial performance in Kenya.

Similar a study could be done in the agricultural seed sector, importation and exportation (trade) sector, health sector, transport sector and education sector both public and private companies. The study to be done on the effects of product innovation, such as MPESA, pepea cards, totohealth, Electronic Certification Systems, Plant Import Quarantine Regulatory Systems on the above sectors indicating their impact on financial performance, this will help to analyze the impact of innovation in other sectors.

Lastly a comparative study to be done on the impact of process, product and financial innovation on government ministries financial performance in Kenya, this will show the impact of technology in government main votes and country as a whole.

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APPENDICES

APPENDIX I: LIST OF UTILITY FIRMS IN KENYA AS AT JUNE 2014

Nairobi Water & Sewerage Company

Nanyuki Water & Sewerage Company

Mombasa Water & Sewerage Company

Nyeri Water & Sewerage Company

Nakuru Water & Sewerage Company

Athi River Water & Sewerage Company

Kiambu Water & Sewerage Company

Oloolaiser Water & Sewerage Company

Kisumu Water & Sewerage Company

Kerarapon Water Project

Western Water Company

Kenya Power & Lighting Company-KPLC

Kenya Electricity Generating Company-KENGEN

Kenya Transmission Company-KETRACO

Source: Water Service Regulatory Board

APPENDIX II: DATA COLLECTION FORM

10- YEAR SECONADARY DATA FOR KENYA POWER AND LIGHTING COMPANY										
YEAR	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
NET INCOME SHS '000'	1270273	1644231	1718477	1764870	3225094	3716370	4219566	4617116	3445717	6456234
TOTAL ASSETS SHS '000'	35837483	38728912	47321864	59812122	70648425	80213470	119878993	136008887	184212535	220109352
ROA= NI/TA	0.035445374	0.042454872	0.036314652	0.029506895	0.05	0.046330997	0.035198544	0.033947164	0.018705117	0.029331939
PREPAID CUSTOMERS					24000	24000	118698	164117	335018	618541
SALE OF ELECTRICITY	21755274	22493912	23303233	23917599	36458817	39107277	42485593	45007884	47916237	62597035
CUSTOMER/EMPLOYEE RATIO	119.93	129	144	159.03	180.64	201.08	205.24	198.85	223	260
SALES(KWH)/EMPLOYEE	687602	716643	762930	762148	738703	734304	680774	584374	590922	641076
COMPL AINTS & ADJUSTMENT ON PAYMENT								2150	1437	2034
TOTAL ASSETS SHS'000'	35,837,483	38,728,912	47,321,864	59,812,122	70,648,425	80,213,470	119,878,993	136,008,887	184,212,535	220,109,352
TOTAL LIABILITIES SHS '000'	16,939,304	18,168,507	25,072,464	35,930,200	43,800,362	51,472,593	95,727,039	80,623,788	120,974,981	147,223,069
DEBT RATIO= TL/TA	0.472670025	0.469119995	0.529828326	0.600717694	0.62	0.641695129	0.798530557	0.592783235	0.656714164	0.668863307

APPENDIX III: LETTER OF AUTHORITY



**UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS
MBA PROGRAMME**

Telephone: 020-2059162
Telegrams: "Varsity", Nairobi
Telex: 22095 Varsity

P.O. Box 30197
Nairobi, Kenya

DATE...16/09/2015

TO WHOM IT MAY CONCERN

The bearer of this letter ...OMESA ANGELA NYAMOLTA.....

Registration No.DE1/G4463/2013.....

is a bona fide continuing student in the Master of Business Administration (MBA) degree program in this University.

He/she is required to submit as part of his/her coursework assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate your assistance to enable him/her collect data in your organization.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request.

Thank you.


PATRICK NYABUTO
MBA ADMINISTRATOR
SCHOOL OF BUSINESS

