EFFECT OF CREDIT FINANCING ON THE PROFITABILITY OF KENYA POWER STIMA LOAN REVOLVING FUND

BY

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DECLARATION

This research project is my original work and has not been presented for a degree in any other University

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Signed…….. Date……

This is to certify that this research project was submitted to the University with my approval as the candidate's supervisor.

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DEDICATION

This research project is dedicated to Kenya Power and Lighting Company and all the people in Kenya hoping to connect to electricity. It is hoped that the findings and suggestions of the study will go a long way to inform on more ways of accelerating connectivity in Kenya.

ABSTRACT

Electricity infrastructure has been identified as one of the pillars that will facilitate the Government of Kenya achieve its Vision 2030 objective of transforming Kenya into a middle-income economy. In tandem with this objective, Kenya Power has set its 5 year Corporate Strategic Plan, to achieve a customer base of 3 million by 2016 from the current total of about 1.9 million, (KPLC, 2012). However, increasing its customer base has been a major challenge as majority of the customers especially the rural customers cannot afford to connect to the power grid due to high connectivity costs. From the literature reviewed, connection subsidies and credit financing schemes such as Kenya Power Stima loan scheme that allow customers to make payments over time have been seen to be a good way to make connection charges affordable. The provision of credit financing however entails negative effects such as credit risk or late payment, as well as high investment costs which may negatively affect a firm's profitability.

The research objective was therefore to establish the effect of credit financing on the profitability of the Stima Loan revolving fund. This research project uses a classic example of Mount Kenya South region which is a strategic business unit of the Kenya Power and which had a total of 2877 Stima loan customers who formed the target population for this research work. The quantitative data collected included data on the Stima loan customer base, costs incurred in connecting the Stima loan customers and subsequent profits generated from these additional customers. Cost Benefit Analysis was used to assess the profitability of the Stima Loan Scheme. The statistical data was analyzed using excel spreadsheet. Before analysis, data was prepared through recording, coding, classification, tabling so as to derive some relevance. Findings

reveal that an increase in customer connectivity as a result of Stima loan scheme is seen to impact on the Mt Kenya South regions revenues generated as a result of increased unit sales. Findings also indicate that a high default rate hinders an organization from achieving adequate profitability. The study concludes that there should be proper monitoring of loan amounts disbursed and more frequent follow-ups of the defaulters to reduce the overall credit risk to avoid exposing the company to unnecessary high levels of risk. Further studies are encouraged to investigate the extent to which Stima loan scheme has facilitated connectivity in Kenya, specifically the rural areas.

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ABBREVIATIONS

KPLC	Kenya Power and Lighting Company
AFD	Agence Francaise Development
EDF	Electricite De France
NSE	Nairobi Securities Exchange
IPP's	Independent Power Providers
EEPCo	Electric Power Corporation
GPOBA	Global Partnership on Output-Based Aid
NES	National Electrification Scheme
NPV	Net Present Value
BCR	**Benefit / Cost ratio**

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

The goal of the modern corporation is to maximize the value of the firm to its shareholders. This is achieved by making decisions that increase the present value of future net cash flows, by undertaking decisions that have positive Net Present Values (NPV's). In today's competitive environment, business organizations in their attempts to maximize shareholder wealth, develop and implement several strategies to increase the amount and timings of cash flows such as offering credit financing to customers. Credit financing is defined as the amount of money provided by a lender and taken by a borrower, payable at some future date on specific terms and conditions and governed by a legal contract.

Credit financing expands a market by increasing the demand of a product. For companies with less market share, credit financing can be very beneficial. Generally the more cash flows from increased sales, the higher will be the NPV of the credit financing decision. Therefore any decision that increases the firms cash inflows increases the value of the firm. However, the provision of credit financing entails negative effects such as credit risk or late payment, which may damage firm profitability. Credit risk is the possibility that the actual return on an investment or loan extended will deviate from that, which was expected. Higher default risk may lead to lower profitability due to a greater likelihood of uncollectible amounts owed by customers. Capital depletion through loan losses has been the proximate cause of most financial institution failures.

Lending represents the heart of the banking industry and loans are the dominant assets as they generate the largest share of operating income. Loans however expose the banks to the greatest level of credit risk. How a bank selects and manages its credit risk is critically important to its performance over time. The risk of a trading partner not fulfilling his or her obligation as per the contract on due date or anytime thereafter can greatly jeopardize the smooth functioning of a bank‘s business. The issue of credit is of greater concern because of the higher levels of perceived risks resulting from some of the characteristics of clients and business conditions that they find themselves in. The credit risk on any individual loan can be broken down into two components: the probability that the borrower will default, and the losses incurred in the event of default. Bank use the 5 C's of credit analysis to evaluate the application for the loan in order to allocate their limited funds. They analyse the borrower’s capacity, character, collateral, capital and conditions prevailing at that time such as economic climate. During a recession or periods of tight credit, it is obviously more difficult for a small business to repay a loan and more difficult for a bank to find the funds to loan. Reduced collateral values increase adverse selection problems as banks try to distinguish between sound and unsound borrowers. Identifying and rating credit risk is the essential first step in managing it effectively. Adequately managing credit is critical for the survival and growth of credit schemes.

The main sources of credit risk include, limited institutional capacity, inappropriate credit policies, volatile interest rates, poor management, inappropriate laws, low capital and liquidity levels, directed lending, massive licensing of banks, poor loan underwriting, reckless lending, poor credit assessment, no non-executive directors, poor loan underwriting, laxity in credit assessment, poor lending practices, government interference and inadequate supervision by the central bank (Sandstorm, 2009). To minimize these risks, it is necessary for the financial system to have; well-capitalized banks, service to a wide range of customers, sharing of information about borrowers, stabilization of interest rates, reduction in non-performing loans, increased bank deposits and increased credit extended to borrowers. Loan defaults and nonperforming loans need to be continuously monitored and systems and procedures put in place to follow up on defaulters (Bank Supervision Annual Report, 2006). Every credit policy set by an organization will seeks to achieve adequate profitability

and flow of cash (liquidity) which are the two basic factors that sustain a business in the present and determines its position in the long run.

1.1.1 Credit policy and corporate profitability

The purpose of a credit policy is to make a profitable sale. An effective credit policy defines the parameters that are most likely to ensure the growth and profitability of an organization. Credit policy encompasses the quality of accounts accepted, the credit period extended, the cash discount given, certain special terms and the level of collection expenditure. In each case, the credit decision involves a trade-off between the additional profitability and the cost resulting from a change in any of these elements.

The objective of credit financing management is to collect debt without losing sales from high-pressure collection techniques. Accomplishing this objective encompasses; credit selection and standard which involve the application of technique for determining which customer should receive credit. This process involve evaluating the customer's creditworthiness and comparing it to the firm's credit standard, its minimum requirements for extending credit to customers and credit monitoring which involves ongoing review of the firm's debtor to determine whether customers are paying according to the stated credit terms. Slow payments are costly to a firm's investment in provision of credit financing.

The trade-off between increase in the market share through credit financing and the collectability of the loaned amounts affects firm's liquidity and its eventual profitability. A firm may report large profit and still suffer liquidity problem if bulk of its transactions are in account receivable and collection policy is not effective. In order for credit policies to be effective they should be continuously analyzed and changes made to take into account changing internal and external environment. These changes should be directed towards increasing profits within the corporation's tolerance for risk. That often means increasing the volume of sales in creditworthy customers. An institution should review significant and frequent policy exceptions to determine the potential impact on its credit risk profile as well as the effectiveness of guidelines.

The administration of loan extends beyond the approval of loans. It requires control and supervision of outstanding loans to ensure their repayments. Bank lending has been a major source of funding for most businesses. There is the need therefore for banks and other financial institutions to be careful in their loan administration, credit policies and collection policies to prevent the inherent risk associated with the product in order to maximize shareholders returns and enhance the image of the institution.

1.1.2 Kenya Power and Lighting Company

Kenya Power is a limited liability company responsible for the transmission, distribution and retail of electricity throughout Kenya. Kenya Power owns and operates the national transmission and distribution grid, and retails electricity to about 1,900,000 customers throughout Kenya. Profits for the year ended June 2012 as reported in the annual report 2011/2012 was 4.6 billion after tax. Electricity infrastructure has been identified as one of the pillars that will facilitate the Government of Kenya achieve its Vision 2030 objective of transforming Kenya into a middle-income economy. Thus the Government plans to increase electricity access rate to 40% by 2020 from the current 29%. In tandem with this objective, Kenya Power has set its 5 year Corporate Strategic Plan, to achieve a customer base of 3 million by 2016 from the current total of about 1.9 million, (KPLC, 2012).

However, increasing its customer base has been a major challenge as majority of the customers especially the rural customers cannot afford to connect to the power grid due to high connectivity costs. Connectivity costs vary depending on the distance one is to a transformer. For customers living within a 600 m radius of a transformer, connection charges are subsidized at Ksh 34,980 for a single phase and 49,080 for a three phase connection. However for customers beyond 600m of a transformer, connection charges are based on the actual cost of materials used, transport and labour used which is not affordable to potential customers

The Kenya Power and Lighting Company (KPLC) offer’s several financing schemes to its customers to make its product more affordable and to help increase its customer base to ensure its financial and economic viability. In one program, the KPLC has

initiated a partnership with Equity Bank to offer “Stima” loans for connection charges to all customers living within 600 m of a transformer. Customers pay 30 percent of the charge up front, with the balance repayable over three years at an annual interest rate of 15 percent. A second program is for customers living outside a 600 m radius of a distribution point. KPLC offers a group program called Umeme Pamoja. This program enables people who normally would not be eligible for individual connections, except at a great cost, to finance the transformer and low-voltage network. The cost of extending power to such households is divided equally among the affected customers, making it more affordable overall. Finally the last program, based on a revolving fund and administered by the KPLC, is open to all customers and requires a 20 percent up-front payment, with the balance due in two years. A 2 percent administration fee is charged on the 80 percent balance.

1.1.3 The Kenya Power Stima loan revolving fund

In knowledge that many Kenyans living in urban and rural areas have not connected to the power grid due to financial outlay required on their part, a National Revolving Fund was recommended following a socio- economic survey in 2006 by a consortium of consultants; Electricite De France (EDF), Axenne and Aberdare Engineering Ltd. The survey was part of a preliminary study funded by the Agence Francaise Development (AFD) under Energy Sector Recovery Project, to review Kenya Power customer connection policy and market share expansion strategy in urban and peri-urban areas. The market survey found that majority of the target customers could not afford to pay for electricity connectivity. The findings of this study were consistent with three research papers done previously by World Bank, AFD and Research Solutions which highlighted the need for availing credit facilities i.e. “Stima Loan” in order to achieve connectivity targets, (KPLC, 2012).

In 2010, in partnership with Agence Francaise Development (AFD), Kenya Power set up a revolving loan fund of about Ksh 450 Million for lending to potential customers under the ‘‘Stima Loan’’ flagship. Customers pay 20 per cent of the connection fee upfront and 80 per cent of the remaining is advanced as loan. The balance is paid in equal instalments over a period of up to 24 months. A 2 per cent administration fee is charged on the loaned amount with no interest charged on the amount borrowed. Customers can borrow up to a maximum of Ksh 100,000 (KPLC, 2012). However, an

increase in loans disbursed as is the case with Stima Loan exposes the company to credit risk, which is the risk that the customer will be unable or unwilling to meet the payments when they fall due. Maximizing a firm's value is dependent on correct investment choices in this case the Stima loan investment, thus management needs sound and reliable tools to minimize the risk of poor investment decisions and assess positive economic benefits to the organization that an investment will bring.

1.2 Problem Statement

Firms adopt several strategies in order to remain competitive. Corporate strategy defines the markets and the businesses in which an organisation chooses to operate. It is concerned with how the company serves its customers at a reasonable profit usually to maximize corporate value or shareholders wealth. The greater a company's customer base, the greater is the additional value all factors held constant. KPLC's 'Stima loan' scheme is such a strategy which aims to increase its customer base and hence electricity sales. Kenya Power has set its 5 year Corporate Strategic Plan, to achieve a customer base of 3 million by 2016 from the current total of about 1.9 million, (KPLC, 2012). However, increasing its customer base has been a major challenge as majority of the customers especially the rural customers cannot afford to connect to the power grid due to high connectivity costs. High cost of electricity installation has been cited as the major challenge hindering majority from connecting to the power grid. This partly explains why only a small proportion of population particularly in rural Kenya have access to electricity.

Niang, (2006) carried out a study on electricity connection charges in Côte d'Ivoire. The study revealed that spreading the initial connections charges over time does increase the number of new poor households connecting to the main grid. The financial contribution of customers is essential for sustainability, and financing options that allow customers to make payments over time are a good way to make connection charges affordable.

To enlarge the customer base, Kenya Power in partnership with AFD has pursued a strategy of financing 80 percent of connection costs which is advanced as a loan and

payable in equal instalments over a period of up to 24 months while the customers pay 20 per cent of the connection fee upfront.

However, an increase in loans as is the case with Stima Loan exposes the company to credit risk, which is the risk that the customer will be unable or unwilling to meet the payments when they fall due. The main challenge experienced so far by the Kenya Power is the high current default rate being about 36.6%, (KPLC, 2012). One direct consequence of loan default is that it has caused considerable reduction in the loan-able amounts in the revolving fund and such a default rate may affect sufficiency and sustainability of the fund. This may limit the organisations ability to access more funds from its financiers to scale up the Stima loan Project. This research therefore aims to fill the gap of knowledge by establishing whether Kenya Power whose primary business is not the provision of credit financing can enhance its value via the Stima Loan Scheme.

1.3 Objective of the study

The objective of the study is to establish the effect of credit financing on the profitability of the Stima Loan revolving fund.

1.4 Value of the study

The findings of this study will be useful to various stakeholders; The Government, Kenya Power and their staff, academia and the general public. The findings will be useful to the Government in re-directing relevant policies towards enhancing electricity coverage in Kenya. The findings will be also be useful to Kenya Power in the effective management of the Stima Loan funds, especially in reviewing regulations that govern their disbursement, repayment rates and interest rates. To the academia, this study will contribute to the available literature, adding to the body of knowledge about electricity connectivity in developing countries. Finally, the findings of the study will be useful to the general public, to enlighten them on how they could benefit and take full advantage of the Stima Loan product

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the existing literature on financing electricity connectivity in Africa. It also reviews literature on credit financing and the credit risk management problem as well as the impact of credit financing on an organisations financial performance.

2.2 Financing electricity connectivity in Africa

According to Chadbourne & Parke, (2009), affordability of electricity is clearly a key issue in Sub-Sahara Africa (SSA). High connection fees, in particular, are a main barrier for the many low income households. Both grid and off grid electrification schemes are looking for new ways to make connections more affordable. This may include targeted subsidies or a variety of deferred payment options when a connection fee is paid over time, pre-financed directly by the utility/service provider or through cooperation with a financial institution.

A study by Dubrovsky and Maurer (2002) reveals that high charges for household electrical connections are a serious impediment to universal electricity access in Sub-Saharan Africa. Connection charges in Sub-Saharan Africa are among the highest in the world, depressing access to electricity in many urban and rural areas. High connection charges mean that the social and economic benefits of electricity are available only to wealthier households, leaving poor households dependent on traditional means of lighting, such as kerosene lamps, which are inferior lighting sources and more dangerous than electricity and, in many cases, more expensive.

Deprived of electricity, poor people lack access to high-value appliances such as fans, radios, and telephone chargers. Making connection charges affordable is a necessary and important first step in addressing the electricity access gap between rich and poor households.

Niang, (2006) carried out a study on electricity connection charges in Côte d'Ivoire. The study revealed that spreading the initial connections charges over time does increase the number of new poor households connecting to the main grid. The financial contribution of customers is essential for sustainability, and financing options that allow customers to make payments over time are a good way to make connection charges affordable. The study revealed that the recovery of high connection charges through monthly bill is not yet a common practice in Sub-Saharan Africa, where many utilities are prevented by governments from recovering even their operating costs through tariffs. One exception is Senegal, where electricity distribution concessions now offer a pre-financing scheme for connection charges and internal wiring. The connection charges are financed as part of the electricity bill, at an interest rate approved by the regulator for a certain period of time. Senegal's program could be replicated in other countries to promote access to electricity by middle- and low-income households deterred by up-front connection charges. The study also revealed Côte d'Ivoire has set up a revolving fund that allows customers to finance 90 percent of the connection charge with interest-free loans over a maximum of two years.

In Ethiopia, the national utility provider, the Ethiopian Electric Power Corporation (EEPCo), has connected about 60,000 poor households under the World Bank–funded Electricity Access Rural Expansion Project. The grant allows the utility to finance 80 percent of the connection charge for poor rural households through five-year, interest-free loans reducing the up-front financial burden for households to just 20 percent of what it was previously. Households also receive two free compact fluorescent lamps as part of the connection package to promote energy efficiency and to make monthly electricity bills more affordable. The poor households in rural areas were targeted through implementation of the financing scheme a year after the community was connected to the electricity grid. The preliminary results of an impact assessment analysis show that the program has been accurately targeted toward poor households and has been a complete success.

Dinkelman (2011) examined South Africa's energy sector. The study revealed that government has provided capital subsidies for electrification directly from the national budget. Customers, too, have been asked to make modest financial contributions. A program in Cape Town allows households that cannot afford to pay the $24 connection charge as a lump sum to discharge it over time on the prepaid meters, through which customers pay for the electricity they use. For each dollar of electricity used, the customer pays an additional $0.14 until the connection charge is paid in full.

In Zambia, the power utility benefits from a World Bank program to reduce connection charges. Under the project, a government subsidy of about $120 covers 75 percent of the cost of a basic household connection. The utility receives the subsidy in the form of materials and equipment to be used to connect a certain number of low-income households. In the initiative's pilot areas, the number of households requesting a connection doubled from the previous volume of requests (AEI 2009).

Maurer and Nonay (2009) found that provision of electricity to rural households in Ethiopia was important in enhancing health and improving living standards of the people of Ethiopia. Thus, the Global Partnership on Output-Based Aid (GPOBA) was created to accelerate the pace of electricity connectivity and increase energy efficiency. The goal of the World Bank–funded Second Electricity Access Rural Expansion Project, (GPOBA), is to establish a sustainable program for expanding access to electricity in rural communities, thus supporting broad-based economic development and alleviating poverty. Ethiopia's goal is to increase the rate of household connections to the main power grid in rural towns and villages that already have electricity. The project is helping the Ethiopian Electric Power Corporation (EEPCo) finance connection charges. Rural households participating in the program must pay 20 percent of the $75 connection charge levied by the EEPCo, with the rest being paid in instalments of about $1 per month, which covers the remainder of the payment over five years. The utility receives a subsidy of $35 per household, which covers the interest rate of financing the connection charge over five years and two compact fluorescent lamps worth about $6.

Gouvello and Kumar (2007) undertook a study on the National Electrification Schemes in Ghana which showed that low connection charges encourage local

populations to participate in rural electrification. With about 23 percent of Ghana's rural population has electricity, the country has one of the highest rates of rural electrification in Sub-Saharan Africa. The country is set to make even further progress. In 1989, the government launched the National Electrification Scheme (NES). The goal was to connect all communities with a population of more than 500 to the national grid by 2020. External funding was provided by a consortium of institutional and bilateral donors under the auspices of the World Bank. Complementing the NES was a three- to five-year rolling electrification program called the Self-Help Electrification Programme. Communities not scheduled for immediate connection to the national grid, but located within 20 km of an existing medium-tension electricity line, help the electricity operator lower its cost by erecting low-voltage distribution poles and therefore ensure that at least 30 percent of the households in the community are wired and ready to be serviced as soon as the electricity supply becomes available. This work is accomplished by the community through a village electrification committee responsible for mobilizing funds, establishing rights of way, and helping people to wire their homes. In 2000, a plan was devised to provide credit for productive and income-generating uses of electricity. More recently, this credit facility which has been a success has been used to help pay for household wiring

High cost of electricity installation has also been cited as a reason for low electricity consumption rate by households in Zimbabwe. The author observes that while in urban areas more than 90% of households are connected to electricity, in the rural areas the connectivity rate is a mere 6%. Despite the substantial income disparities between urban and rural households, the connection fee is the same for rural and urban households due to heavy subsidization by the government. If it were not subsidized, the electricity connectivity rate would be even much lower in rural areas than is the case currently.

In Botswana, the government offers loans to rural customers for 95 percent of the standard connection charge ($615). The loan is payable over 15 years at the prime interest rate. The connection and installation services include smart meters with prepayment cards for electricity consumption. The high connection charge in Botswana reflects high costs that could probably be decreased by lower-cost designs.

Meanwhile, offering loans to help new customers pay connection charges is a step in the right direction. Some subsidies to the interest rate may be justified.

Uiso (2009) reveals that the low rate of electricity connectivity in rural areas is due to many factors such as limited funds to cover capital and operating costs required to generate, transmit and distribute electricity, which are higher in rural areas than urban areas. There exist two types of rural areas without electricity (i) those within close proximity to the grid that can be reached through a grid extension program, and (ii) those that are far away from the grid in isolated remote areas with dispersed demand pattern. It is connecting the latter group that mostly justified the role of financing in facilitating rural connectivity. Indeed, when households in the rural areas are very poor and the provision of electricity is too expensive for them to afford it, rural electrification subsidies are required.

Wanyoike (2012) carried out a study on factors influencing electricity connectivity in rural Kenya. The study revealed that the development projects in the energy sector are capital intensive and require huge investments. One of the main obstacles to implementing energy projects is often not the technical feasibility of these projects but the absence of low-cost, long-term financing. Financing affects rural access to electricity in such a way that when more finances are allocated to rural electrification programs, then the power generation and distribution agencies will build infrastructure network to increase connection points on the grid. This will lower the costs of connection and encourage more rural dwellers to apply for a connection.

2.3 Credit Financing

The goal of every credit institution is to achieve the highest level of profitable sales over the shortest period of time with the minimum of bad debts. In order to achieve this, credit organisations prefer that all customers and potential customers will be solvent and be able to meet their financial obligations as and when they arise. In the modern, highly competitive environment where companies compete with each other for sales growth, it is inevitable that sales will have to go beyond the safer customers into the area of those who are of higher credit risk. Credit risk is an investor's risk of loss arising from a borrower who does not make payments as promised.

2.4 The credit risk management problem

Default or arrears tend to undermine the long term efforts of an institution which erodes the value of credit financing and limits potential customers being reached resulting into institution's collapse. As a result most companies are caught up trying to control and eliminate default and arrears rather than defining credit terms and payment schedules as a foundation. Credit risk management is a problem faced by all credit giving institutions. The credit risk management problem arises when the debtor (buyer) fails to honour their obligation.

Bhatt and Tang (2002) conducted a study to investigate the determinants of loan repayments among individual small borrowers. Bhatt and Tang looked at the borrower's socio economic variables and how they influence loan repayment behaviour. The borrower's socioeconomic variables included gender, educational level, household income and characteristics of the business (type of business, years in business, etc.). In their study, they found that a higher education level was significant and positively related to better repayment performance.

Glennon and Nigro (2005) analyze loan repayment and find that defaults are time-sensitive and are particularly affected by the changing economic climate during the life of the loan. In addition, they find that long-term loans are more sensitive to changes in the business cycle than short term loans. The capability of borrowers to repay their loans is an important issue that needs attention. Borrowers can either repay their loan or choose to default. Borrower defaults may be voluntary or involuntary (Brehanu & Fufa, 2008). According to Brehanu and Fufa (2008), involuntary defaults of borrowed funds could be caused by unexpected circumstances occurring in the borrower's business that affect their ability to repay the loan. Unexpected circumstances include lower business revenue generated, natural disasters and borrowers' illness. In contrast, voluntary default is related to morally hazardous behaviour by the borrower. In this category, the borrower has the ability to repay the borrowed funds but refuses to pay because of the low level of enforcement mechanisms used by the institution.

Makina and Malobola (2004) studied the causes of low repayment for in South Africa's Khula Enterprise Finance credits. Khula is a Government-funded financial institution charged with helping small and medium sized enterprises secure finance. It

does this through providing security on behalf of small businesses, as well as offering them loans through partner intermediaries. They found that a major contributing factor for default was beneficiaries' perception that the microloans were free government grants. With respect to institutional factors, the efficiency of the lending institution can reduce default. In Nepal, for instance, the more efficient finance institutions managed by the private sector were found to be better off than government-owned institutions. Efficiency may come from improvement in processes, computerization of management information systems, and improved financial management. Particularly with microcredit, small loans can be profitable only if administrative costs are reduced to a bare minimum.

Credit risk management is a process that involves a series of steps; identifying and analyzing loss exposures through the appraisal technique, measuring loss exposures, selecting the technique or combination of techniques to be used to handle each exposure, implementing the techniques chosen and monitoring the decisions made and making appropriate changes. It is includes the support, control systems and other practices necessary to manage the outstanding risk assets, normal repayment and to monitor business risk. In order for banks to address the credit management problem, they usually base their credit analysis on the five C's principals of lending.

2.5 The 5 C's Model of Client Appraisal

2.5.1Character

Character basically is a tool that provides weighting values for various characteristics of a credit applicant and the total weighted score of the applicant is used to estimate his credit worthiness. This is the personal impression the client makes on the potential lender.

The factors that influence a client's character can be categorized into psychological, personal and social factors. The psychological factor is based on a man's inner worth rather than on his tangible evidences of accomplishment. Financial institutions consider this factor by observing and learning about the individual. In most cases it is not considered on first application of credit by an applicant but from the second time. Under social factors, the client's lifestyle is observed. This includes patterns of social

relations (membership groups), consumption and entertainment. A lifestyle typically also reflects an individual's attitudes, values or worldview. Reference groups in most cases have indirect influence on a person's credibility. Financial institutions try to identify the reference groups of their target as they influence a client's credibility. Personal factors include age, life cycle stage, occupation, income or economic situation, personality and self concept. Under life cycle stage for example older families with mature children are not likely to default since it's easier to attach collateral on their assets since they are settled unlike the unsettled young couples.

2.5.2 Capacity

Capacity evaluates the applicant's ability to pay the debt advanced within the required time. This is ascertained by evaluating the value of customer's capital and asset offered as collateral against the loan. The financial institutions will also consider the cash flow from the business, the timing of the repayment, and the successful repayment of the loan. Cash flow

helps to determine if the borrower has the ability to repay the debt. The analysis of cash flow can be very technical. It may include more than simply comparing income and expenses. Financial institutions will determine cash flow by examining existing cash flow statements (if available) and reasonable projections for the future.

2.5.3 Collateral

Collateral represents assets that the company or individual pledges as alternative repayment source of loan. Most collateral is in form of hard assets such as real estate and office or manufacturing equipment. Lenders of short term funds prefer collateral that has duration closely matched to the short term loan.

2.5.4 Capital

Capital is measured by the general financial position of the borrower as indicated by a financial ratio analysis, with special emphasis on tangible net worth of the borrower's business. Thus, capital is the money a borrower has personally invested in the business and is an indication of how much the borrower has at risk should the business fail.

2.5.5 Condition

Condition refers to the borrower's sensitivity to external forces such as interest rates, inflation rates, business cycles as well as competitive pressures. The conditions focus on the borrower's vulnerability. These conditions may affect the borrower's ability to repay the debt and which may prove unprofitable to the lender.

2.6 Credit Management Policy

Credit management policy is a set of guidelines designed to minimize costs associated with credit while maximizing benefits from it. According to Gitman (1992), there are three important aspects in a sound credit policy, which include credit standards, credit terms and collection procedures.

2.6.1 Credit Standards

Pandey (1995), define credit standards as criteria, which a firm follows in selecting customers for the purpose of credit extension. Credit standards therefore stipulate the minimum financial strength an applicant must demonstrate in order to be granted credit. Setting credit standards implicitly requires a measurement of credit quality. In determining credit quality, the firm should first establish the character of the potential, customer whether he/she can honour the obligation, capacity to pay back which can be gauged in records and business methods and observation of customer's plants and stores, capital, collateral capacity, which are the assets that the customer may offer as security to obtain a credit and conditions generally referring to economic trends or a special development in certain geographical regions or sectors of the economy which may affect the customers ability to meet his/her obligations.

2.6.2 Credit terms

Credit terms are stipulations under which a firm grants credit to customers. The firm should try to make terms more attractive to act as incentives to clients without incurring unnecessarily high levels of bad debts. Credit terms specify the length of time over which credit is extended to a customer and the discount if any given for early repayments. A firm may follow a lenient or stringent credit policy. Lenient policy tends to sell on credit to customers or very liberal terms and standards. Stringent credit policy tends to sell credit on a highly selective basis only to those who have proven credit worthiness and who are financially strong.

2.6.3 Collection efforts

Collection policy refers to the procedures used to collect debts such as letters, telephone calls, representatives and many others. A collection policy is needed because all the customers do not pay the firm's bills on time (Pandey, 1995). The collection efforts should aim at accelerating collections from slow payers and reducing bad debts. In order to collect the slow paying accounts, the firm should follow collection procedures in a clear cut sequence. For instance when a normal credit period granted to a customer is over and he has not made the payment, a polite letter reminding the customer that the account is overdue should be sent. If the receivables remain uncollected, letters that are progressively strongly worded can follow t or the firm's representative may pay personal visit to the customer. If the payment is still not made, the firm may proceed to a legal action.

2.7 Relationship between credit management policy and bad debts

According to Pandey (1995), a firm may follow a lenient or stringent policy; the firm following a lenient credit policy tends to sell on credit to customers on a very liberal terms and standards. Credits are granted for longer periods, even to those customers whose credit worthiness is not fully known or whose financial position is doubtful and this creates a lot of book debts and running costs and the firm utmost earns losses through accumulation of bad debts. In contrast, a firm following a stringent credit policy sells on credit on a highly selective basis only to those customers who have proven credit worthiness and who are financially strong this will reduce on the bad debt risk for the company.

2.8 Credit rating Agencies

According to Treacy & Carey (2000), credit risk rating in large U.S. Banks and development finance institutions are becoming increasingly important in credit risk management. They argued that credit rating summarizes the risk of loss due to failure by a given borrower to pay as promised. Credit rating agencies gather and analyze all sorts of pertinent financial and other information, and then use it to provide a rating of the intrinsic value or quality of a security as a convenient way for investors to judge credit quality and make investment decisions. The purpose of ratings is to measure credit risk in terms of probability of default, expected losses or likelihood of timely payments in accordance with contractual terms.

Understanding how rating systems are conceptualized, designed, operated and used in risk management is thus essential to understanding how development banks perform their business lending function and how they choose to control risk exposures. The specifics of internal rating system architecture and operation differ substantially across development banks. The number of grades and the risk associated with each grade vary across institutions, as do decisions about who assigns ratings and about the manner in which rating assignments are reviewed. In general, while designing rating systems, development bank management must weigh numerous considerations including; cost, efficiency of information gathering, consistency of ratings produced, the nature of the bank's business and the uses to be made of internal ratings. There is no one correct rating system; instead, ‘‘correctness" depends on how the system is used. For example, a development bank that uses ratings mainly to identify deteriorating or problem loans to ensure proper monitoring may find that a rating scale with relatively few grades is adequate. In contrast, if ratings are used in computing for example, bonds rated Aaa on Moody's scale or AAA on Standard & Poor's scale pose negligible risk of loss in the short to medium term whereas those rated Caa or CCC are quite risky. It should be noted that, ratings do not explain certain variables taken to be vital to business operations, like taxation, systematic risk, supply and demand, volatility hence may not capture all the riskiness of any business operation.

A number of academic papers have investigated the informational efficiency of ratings in relation to the level of changes in default risk. Some of these studies tested the consistency of ratings across industrial segments and geographical regions. Ammer and Packer, (2000) showed that, in some years, US financial companies obtained higher ratings than other companies with similar annual default risks. Cantor and Packer (1995) also examined inconsistencies across several groups. These studies did not set out to control for inconsistencies across narrower sectors or to determine any company-specific variables, such as size or leverage. They only took account of Moody's ratings and did not address the question of the information provided by credit rating sub-categories.

Galil, (2002) examined the quality of corporate credit ratings in relation to their default prediction power. The focus was on whether ratings efficiently incorporate publicly-available information at the time of rating, the extent to which rating

classifications are informative and whether rating classifications are consistent across industries and countries of incorporation. The results reveal that ratings could be improved by using publicly-available information such as size, leverage and availability of collateral. Therefore, combining such public information, industry classification with ratings could produce a better assessment of default risk. Despite the fact that ratings have some undesired qualities, the real informational content of ratings cannot be disregarded. Ratings provide a better assessment of default risk than public information alone.

2.9 Summary

A lot of research on financing electricity connectivity has been undertaken in the past years especially that which targeted the developing countries; many researchers have highlighted the importance of electricity connectivity to the development of an economy as well as the living standard of the community. High cost of electricity installation has been cited as the major challenge hindering majority from connecting to the power grid. Connection subsidies and credit financing schemes that allow customers to make payments over time have been seen to be good way to make connection charges affordable. Thus, there is need to have an efficient credit management policy to minimize the costs involved in loan allocation whereas on the other hand maximizing the returns from such undertakings. Given that the Stima loan scheme which is a new credit facility introduced in 2010 to enhance electricity connectivity in Kenya, no known studies have been done to find out its profitability given the high cost of investment. This research therefore aims to fill the gap of knowledge by establishing whether Kenya Power whose primary business is not the provision of credit financing can enhance its value via the Stima Loan Scheme.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology that was employed in collecting and analyzing data for the study. It comprises a description of the study design, study population, data collection as well as methods employed in analyzing and interpreting data.

3.2 Research Design

The research design was a Case study on the profitability of Kenya Power Stima loan revolving fund scheme. Kiptoo (2008) asserted that a case study research design is appropriate where a detailed analysis of a single unit is desired as it provides a focused insight into a phenomenon. To achieve the overall research objective and to systematically solve the research problem, the researcher used a quantitative research approach. Quantitative approaches are often favoured to support project evaluation and selections if the decisions require economic justification.

3.3 Target population

Mount Kenya South region, which is a strategic business unit of the Kenya Power had a total of 2877 Stima loan customers who formed the target population for this research work. Mt Kenya South region was conveniently selected for this research because most information is readily and easily accessible to the researcher who is based in Mt Kenya region of the Kenya Power.

3.4 Data collection

The study used secondary data sources collected within the Finance, Marketing and debt collection sections of Mt Kenya South region. The specific secondary data collected included data on the Stima loan customer base, costs incurred in connecting

the Stima loan customers and revenues generated from these additional customers. Mount Kenya South region, which is a strategic business unit of the Kenya Power had a total of 2877 Stima loan customers who formed the target population for this research work.

3.5 Data analysis

Quantitative data obtained was reliable and covered the financial year 2010-2011 when the Stima loan project began, 2011-2012 and financial year 2012-2013. Cost Benefit Analysis was used to assess the profitability of the Stima Loan Scheme. The statistical data was analyzed using excel spreadsheet. Before analysis, data was prepared through recording, coding, classification, tabling so as to derive some relevance in them.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.0 Introduction

This chapter presents an analysis of the data that was collected from secondary data sources within finance and marketing division for the Stima loan customers who formed the target population for the study. Data on customer base growth as a result of the Stima Loan scheme, revenues generated and costs incurred in connecting the loan customers was collected. Data that was obtained was reliable and covered the financial year 2010-2011 when the Stima loan project began, 2011-2012 and financial year 2012-2013. Data collected was used to determine the profitability of the scheme. The presentation is later followed by a critical analysis of the finding of this study.

4.1Growth in Customer base

Kenya power customers company-wide has been increasing since 2004 (Appendix 1). The data collected revealed that the total number of Stima loan customers in Mt Kenya South at the time of study stood at 2877. Total The number of Stima loan beneficiaries has been increasing in each financial year with a drop in beneficiaries in financial year 2012-2013 as shown in the table and graph below:

Table 4.1.1: Number of Stima Loan Customers

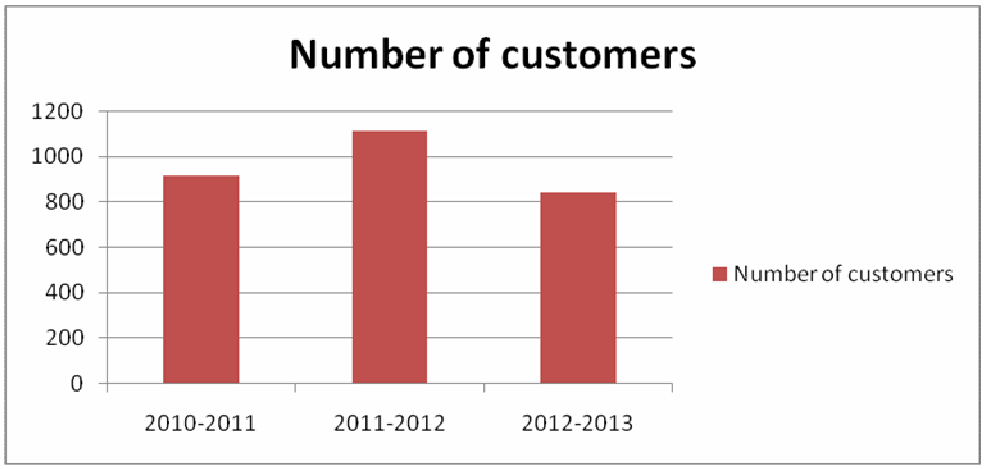
Years	2010-2011	2011-2012	2012-2013
Number of customers	917	1114	846
Cummulative	917	2031	2877

Source: Secondary Data

High number of customers is seen in financial year 2010-2011 when AFD advanced Kenya Power Sh450 million as a grant in July 2010 under the 'Stima loan' project and financial year 2011-2012 which has enabled the company to connect customers to the power grid. The drop in the number of beneficiaries in financial year 2012-2013 is

associated with a high default rate of the customers already servicing their loans. Given that the Stima loan is a revolving fund with limited amount of initial capital, the next round of loans can only be granted once the previous loans have been paid in full. Hence a decrease in the number of beneficiaries is as a result of reduction in the loan-able amounts available.

Figure 4.1.2: A bar graph showing growth of Stima loan customers in Mt Kenya South



4.2 Total Stima Loan Funds Disbursed

The study revealed that disbursements of the Stima loan funds to any region is dependent on the number of applicants and the amounts collected from repayments of loans given that it is a revolving fund where funds are only available once previous loans have been paid back.

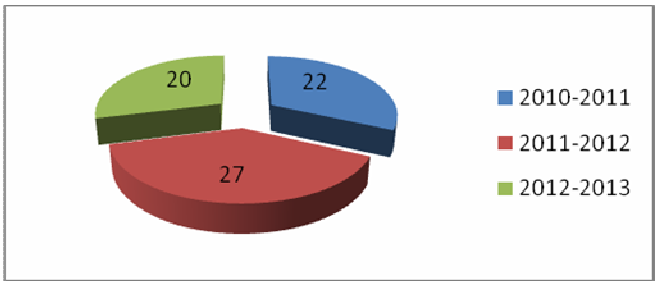
Data collected revealed that amount of funds disbursed in Mt Kenya South region totaled to around 70million with a drop in amounts disbursed in 2012-2013. Total amount of Stima loan disbursed within the years 2010-2013 is as shown in table and chart below.

Table 4.2.1: Stima Loans Disbursed (In Millions)

Years	2010-2011	2011-2012	2012-2013
Loans Disbursed	22	27	20

Source: Secondary Data

Figure 4.2.2: A pie chart showing total loans disbursed



This decrease in disbursements in financial year 2012-2013 is as a result of an increase in number of Stima loan defaulters.

4.3 Stima Loan funds defaulted

Default tends to undermine the long term efforts of an institution which erodes the value of credit financing and limits potential customers being reached resulting into institution's collapse. Stima loan defaulters are defined as those who are either not making re-payment at all of those that are not making their monthly payments in timely manner.

Total default rates for the amounts disbursed are as shown below:

Table 4.3.1: Stima Loans Defaulted (In Millions)

Years	2010-2011	2011-2012	2012-2013
Loans Disbursed	22	27	20
Loans recovered	18.3	17.1	17.6
Defaults	3.7	9.882	2.4
Percentage default	17%	36%	12%

Source: Secondary Data

The study revealed that default rate was highest in financial year 2011-2012 with a drop in default rate in financial year 2012-2013. The drop in default rate was as a result of increased follow-up by the marketing and finance departments such as sending sms reminders, making telephone reminders and facilitating more pay points

for the customers to make their loan repayments including paying through their mobile phones.

4.4 Revenues from Stima loan customers

Table 4 below gives average revenues collected from monthly billings of the 2877 customers within the financial years 2010-2011, 2011-2012 and 2012-2013. The table reveals an increase in revenues collected up to financial year 2012-2013.

Table 4.4.1: Average revenues generated from Monthly billings

Monthly Bills	Mean	Customers	Average Monthly revenue	2010-2011	2011-2012	2012-2013
250-400	325	1700	552,500	6,630,000.	13,260,000	19,890,000
400-500	450	752	338,400	4,060,800	8,121,600	12,182,400
Above 500	500	425	212,500	2,550,000	5,100,000	7,650,000
Totals		**2877**	**1,103,400**	**13,240,800.00**	**26,481,600**	**39,722,400**

Source: Secondary Data

An increase in customer connectivity as a result of Stima loan scheme is seen to positively impact on the Mt Kenya South regions revenues. An increase in customers increases the company's revenues generated from monthly electricity billings to the customers.

Data on the average monthly bills paid by the Stima loan customers was collected from the finance section. This data revealed that 59% of these customers paid on average a monthly bill of between Ksh 250 and 400. 26% of these customers paid on average a monthly bill of between 400 and 500 while 15% paid on average monthly bills of more than 500. This analysis is seen in table 2 below.

Table 4.4.2: Average monthly bills Payments

Monthly Bills	No Customers	Percentages
250-400	1700	59%
400-500	752	26%

Above 500	425	15%
Totals	**2877**	**100%**

Source: Secondary Data

4.5 Transmission and Distribution Costs

The expansion of the Company's electricity network and facilities to support increased demand and improvement of the quality of power supply, will lead to an increase in the transmission and distribution expenditure. A growing demand of electricity therefore will result to an increase in investment in transmission and distribution (T&D) networks such as adding more lines, transformers etc. The study revealed that distribution costs increase with an increase in customers connected to the power grid as a result of material, transport, labour costs. An analysis of the data collected on the costs incurred by the Company to connect a customer revealed that material costs such as transformer costs, poles, copper wires etc constituted slightly above 50% of the total construction costs. Labor costs constituted 36% of the overall construction costs while transport costs constituted the least percentage of costs incurred.

Table 4.5.1: Proportion of Electricity distribution Costs

Proportions of costs incurred	
Material	0.51
Labour	0.36
Transport Costs	0.13
Total	**1**

Source: Secondary Data

4.6 Power Purchase Costs

The study revealed that additional customers connected to the power grid results to an increase in units consumed. More units will therefore have to be purchased to meet the additional demand, resulting to increased power purchase costs as seen in table 4.6.1. The study revealed that Kenya Power purchases majority of its power from Kengen at a cost of Ksh 3/unit and that the average monthly unit consumption for the customers is about 90 units.

Table 4.6.1 Power purchase cost

Years	2010-2011	2011-2012	2012-2013
Number of customers (cumulative)	917	2031	2877
Total Units consumed in the year	990,360	2,193,480	3,107,160
Total power purchase costs @ Ksh 3per unit	2,971,080	6,580,440	9,321,480

Source: Secondary Data

4.7 Administration costs

A 2 per cent processing fee is charged on the amounts that have been loaned to the customer's. Total loan disbursements for the years 2010-2011, 2011-2012 and 2012-2013 are as shown below and administration costs charged are as seen in below.

Table 4.7.1: Stima loan Processing fee (in millions)

Years	2010-2011	2011-2012	2012-2013
Loans Disbursed	22	27	20
Processing fee	0.44	0.54	0.4

Source: Secondary Data

4.8 Profitability analysis

The goal of every corporate strategy is to serve its customers at a reasonable profit usually to maximize the corporate value or the share holder wealth. In order to calculate the profitability of Stima loan scheme, a closer look at the cash inflows generated by the project and a breakdown of costs/ cash outflows is done as shown in the table below.

Table 4.8.1: Stima loan profitability analysis

	2010-2011 Ksh 000	**2011-2012 Ksh 000**	**2012-2013 Ksh 000**
Number of customers (cummulative)	917	2031	2877
Revenues from billings	13,240.80	39,722.40	79,444.80
2% Processing fee (of disbursement)	440.00	540.00	400.00
Less Direct Costs			
Defaults	(3,700.00)	(9,882.00)	(2,400.00)
Power purchase cost(at sh 3/unit)	(2,971.00)	(9,551.00)	(18,872.00)
Material costs	(2,691.50)	(4,552.19)	(7,117.00)
Labour Costs	(1,937.88)	(3,277.58)	(5,124.24)
Transport Costs	(999.79)	(1,183.57)	(1,850.42)
Administration costs	(440.00)	(540.00)	(400.00)
Contribution Margin	940.63	11,276.07	44,081.14
Less:			
Finance Costs	0	0	0
Profits	940.63	11,276.07	44,081.14

The study revealed that an increase in customer connectivity influences profitability as a result of increased unit sales and revenues generated from additional monthly billings. Profits are seen to be increasing since financial year 2010-2011. Profits generated were lowest in financial year 2010-2011 which is characterized by high initial investment costs relative to revenues generated as well as lowest number of Stima loan customers. Profitability is seen to be highest in financial year 2012-2013 which is characterized by the lowest default rate as seen in Appendix 2.

CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter presents a summary of the key findings of the study, a highlight of the conclusions and recommendations for management and policy action. The chapter concludes with recommendations for further studies.

5.1 Summary of findings

The study endeavoured to establish the effect of credit financing on the profitability of the Stima Loan revolving fund. Mount Kenya South region, which is a strategic business unit of the Kenya Power had a total of 2877 Stima loan customers who formed the target population for the study.

The study revealed that an increase in customer connectivity as a result of Stima loan scheme is seen to positively impact on the Mt Kenya South regions revenues generated from monthly electricity billings to the customers since inception of the scheme in financial year 2010-2011.

Notably, a growing demand of electricity will result to an increase in investment in transmission and distribution (T&D) networks to serve the additional customers. The study revealed that distribution costs such as power purchase costs, labour costs, material costs, transportation costs increase with an increase in customers connected to the power grid. On a scale of 1 to 3 in terms of importance, material costs represent the highest percentage of costs incurred i.e. 51%, followed by labour costs at about 36% of the overall costs and finally transport costs represented by 13%.

In relation to the profitability of the Stima loan scheme, findings reveal that an increase in customer connectivity influences profitability due to an increase in revenues generated from additional monthly billings. In addition, high costs involved with connecting the customers negatively affect the profitability of the scheme. Notably, the scheme has been profitable since inception in June 2010 to date as seen by the positive net cash flows generated. However profits were relatively low in financial year 2011-2012 which is characterized by a high default. A high default rate hinders an organization from achieving adequate profitability and flow of cash (liquidity) which are the two basic factors that sustain a business in the present and determines its position in the long run. The study revealed that various initiatives are underway to facilitate more pay points for the customers to make their loan repayments including paying through their mobile phones as well as sending of sms reminders and incorporating Stima loan balances in their monthly bills.

5.2 Conclusions of the study

In order to ensure a fairly healthy credit management program with minimal expensive bad debts and minimized credit risk and enhanced profitability, an organization should strive to establish an effective credit control and lending policy. The importance of credit policy therefore to any business organization cannot be over emphasized because it is a factor that has a strong influence on the cash inflow of an organization from its sales activities which is very critical to any business organization. Every credit policy set by an organization should seek to achieve adequate profitability and flow of cash (liquidity) which are the two basic factors that sustain a business in the present and determines its position in the long run.

In light of the above discussion, the researcher makes the following recommendations for policy, management and further research.

5.3 Recommendations of the study

There should be proper monitoring of loan amounts disbursed and more frequent follow-ups of the defaulters to reduce the overall credit risk to avoid exposing the company to unnecessary high levels of risk. Given that there is a limited amount of initial capital in the Stima loan revolving fund and the next round of loans are only be granted once the previous loans have been paid in full, more flexible connection and

re-payment arrangements should be made for the defaulters to ensure a lower default rate. The idea that the terms of the loan repayments are in sync with the size of the fund and that repayments are made on time will allow new loans to be given out as required and the fund never runs out is a difficult balance and hence proper credit management is required.

5.4 Suggestions for further research

The introduction of Stima loan credit assistance has made connectivity easier. Bearing in mind that this is a policy program, it will be interesting for further studies to investigate the extent to which Stima loans has facilitated increased connectivity specifically in rural Kenya. Other schemes implemented by Kenya Power to enhance electricity connectivity in Kenya and their impact should also be researched on.

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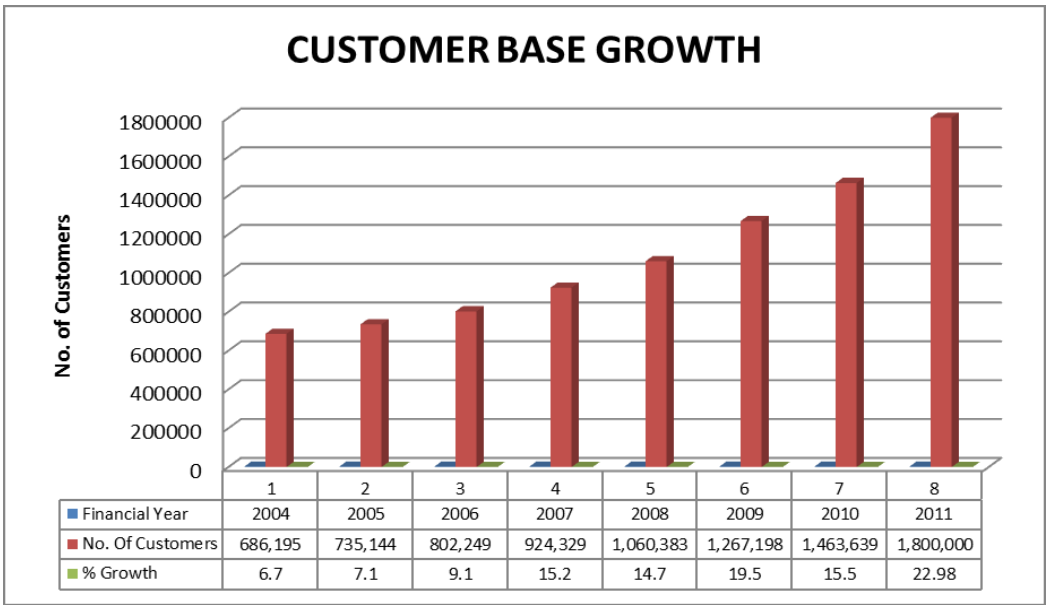
Appendix 1



	1	2	3	4	5	6	7	8
Financial Year	2004	2005	2006	2007	2008	2009	2010	2011
No. Of Customers	686,195	735,144	802,249	924,329	1,060,383	1,267,198	1,463,639	1,800,000
% Growth	6.7	7.1	9.1	15.2	14.7	19.5	15.5	22.98

	Ksh 000	Ksh 000	Ksh 000
Defaults	**(3,700.00)**	**(9,882.00)**	**(2,400.00)**
Power purchase cost(at sh 3/unit)	(2,971.00)	(9,551.00)	(18,872.00)
Material costs	(2,691.50)	(4,552.19)	(7,117.00)
Labour Costs	(1,937.88)	(3,277.58)	(5,124.24)
Transport Costs	(999.79)	(1,183.57)	(1,850.42)
Administration costs	(440.00)	(540.00)	(400.00)
Contribution Margin	940.63	11,276.07	44,081.14
Less:			
Finance Costs	0	0	0
Profits	**940.63**	**11,276.07**	**44,081.14**

Appendix 2: Stima loan profitability analysis