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# Effects of Credit Risk and Loan Repayment on Profitability of Kenya Power

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### ABSTRACT

The purpose of this paper was to establish the effects of credit risk and loan repayment on Kenya Power profitability. The increase in Kenya Power 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. Descriptive research design was used for this study and the target population was all 47 County managers in Kenya where respondents were selected using stratified sampling technique. The sample size used was 42 respondents and primary data was obtained by use of questionnaires whereas secondary data was obtained from the Kenya Power, Coast region. The study recommends that the Kenya Power should lower the amount required as deposit so as to increase the uptake stima loan by customers. The study also recommends that stima loan processing fee should be factored as major income to the Kenya Power as it increases profitability of the company.

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### 1. Introduction

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. In today's competitive environment firms must sell on credit to enhance sales (turnover). However, selling on credit has its hazards. Customers will routinely seek the best terms possible, often attempting to postpone payment for as long as possible. Unfortunately, delinquent payments hurt company's cash flow and eventually result into write-offs which according to Horne (2008) erode company's profitability by the cost and other direct expenses incurred to make the sale.

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.

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 (Sandstorm, 2009).

Bhatt and Tang (2008) 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.

According to Treacy & Carey (2008), 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.

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 Net Present Value of the credit financing decision. Therefore any decision that increases the firm's 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 (Adeyemo, 2009).

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, 2009).

### 1.1 Statement of the Problem

However, the credit management crisis is a worldwide problem. In Kenya, empirical and case studies have been carried out on credit risk management in the agricultural, financial and publishing sector respectively. Njiru (2008) studied Credit Risk management by Coffee Cooperatives in Embu District while Kabiru (2009) studied on the relationship between credit risk assessment practice and the level of non-performing loans of Kenyan Banks. In addition, Mutwiri (2007) studied the use of 6C's credit risk appraisal model and its relationship with the level of non-performing loans of commercial banks in Kenya and Osman (2008) studied the credit management policy of Nation Media group focusing largely on its distributors.

In Kenya, for instance, many financial institutions have collapsed due to among other factors, poor lending policies. Institutions such as African Credit Finance, Trade Bank, Post Bank Credit and Euro Bank are a few examples. Additionally, Kenya Commercial Bank and National Bank of Kenya Ltd also underwent restructuring to save them from imminent collapse due to nonperforming loans. The increase in bad debts provisions continued to erode the banks profitability in Kenya and the growth in bad debt provisions has also led to corresponding decrease in after tax profit (attributable earnings), (Financial Standard, 2009). The bad debts problem transcends across industries in all the sectors of the economy from service, agriculture, financial, hospitality to educational institutions. In this regard, as established from the Annual Report and Accounts (2009) KPLC is not an exception.

Kenya Power has set its 5 year Corporate Strategic Plan, to achieve a customer base of 5 million by 2020 from the current total of about 2.7 million, (KPLC, 2015). 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.

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 loanable 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 aimed to fill the gap of knowledge by establishing whether Kenya Power whose primary business is not the provision of credit financing can enhance its profitability through the Stima Loan Scheme.

### 1.2 Research Objectives

- i. To find out the effect of repayment period of Stima loan on Kenya Power profitability.
- ii. To establish the effect of credit risk of stima loan on profitability of Kenya Power.

## 2. Materials and methods

### 2.1 Theoretical Review

#### 2.1.1 Transaction Cost Theory

Transaction cost theory can be applied to credit management, specifically regarding the economic rationale for integrating, or internalizing the credit management function within firms, or entering into market transactions whereby a third party specialist manages the credit operation (Coase, 2007). According to Williamson (2009), it is the superior ability of the firms to reduce human opportunism through hierarchical controls, rather than market mechanisms, that justify the very existence of organizations. He identifies two further conditions under which organizations are superior to sophisticated markets, (i) when transaction outcome are highly complex or uncertain, and (ii) when reputations of transacting parties are hard to establish. Given the routine nature of credit management activity and the availability of credit ratings through credit information companies, it might appear that large elements of credit management activity could be conducted more efficiently through the market than through internal mechanisms. Those elements of the credit function that remain in-house are assumed to be more cost effective than entering into separate contracts with external agents to carry out such duties.

Smith and Schnucker (2008) focus on the transaction costs in the factoring decision, while Mao and Sarndal (2004) broaden the activities to include credit insurance, credit reporting, credit collection and captive finance subsidiaries. This is particularly the case where the credit sale involves a specific investment (whether in time or money) in meeting customer requirements (Williamson, 2009; and Smith, 2007). Given the large amount of capital employed in accounts receivable risky assets, the choice of credit management policies, and whether they are conducted internally or through the market, has important implications to the value of the firm.

Three sources of cost advantage were classified by Petersen and Rajan (2007) as follows: information acquisition, controlling the buyer and salvaging value from existing assets. The first source of cost advantage can be explained by the fact that sellers can get information about buyers faster and at lower cost because it is obtained in the normal course of business. That is, the frequency and the amount of the buyer's orders give suppliers an idea of the client's situation; the buyer's rejection of discounts for early payment may serve to alert the supplier of a weakening in the credit-worthiness of the buyer, and sellers usually visit customers more often than financial institutions do.

### 2.1.2 Asymmetrical Information Theory

Information asymmetry theory refers to a situation where business owners or manager know more about the prospects for, and risks facing their business, than do lenders (PWHC, 2008) cited in Eppy. I (2009). It describes a condition in which all parties involved in an undertaking do not know relevant information. In a debt market, information asymmetry arises when a borrower who takes a loan usually has better information about the potential risks and returns associated with investment projects for which the funds are earmarked. The lender on the other hand does not have sufficient information concerning the borrower (Edwards and Turnbull, 2006).

Binks *et al.*, (2008) point out that perceived information asymmetry poses two problems for the banks, moral hazard (monitoring entrepreneurial behavior) and adverse selection (making errors in lending decisions). Banks will find it difficult to overcome these problems because it is not economical to devote resources to appraisal and monitoring where lending is for relatively small amounts. This is because data needed to screen credit applications and to monitor borrowers are not freely available to banks. Bankers face a situation of information asymmetry when assessing lending applications (Binks and Ennew, 2006). The information required to assess the competence and commitment of the entrepreneur, and the prospects of the business is either not available, uneconomic to obtain or difficult to interpret. This creates two types of risks for the Banker (Deakins, 2009).

### 2.2 Research Methodology

The research design appropriate for the study was descriptive research design. Kiptoo (2008) asserted that a descriptive research design is appropriate where a detailed analysis of a single unit is desired as it provides a focused insight into a phenomenon. The population of this study was composed of all the County managers in the country i.e 47 County managers. These employees were chosen upon because of their involvement in the day to day process of Kenya Power. A stratified sample of personnel was drawn for the purpose of administering questionnaires. Stratified sampling is a method by which subjects are grouped according to strata such as age, gender or other characteristic. The researcher used simple random sampling to obtain a sample size of 42 respondents. Qualitative and quantitative research methods were complementarily used in order to have a more objective interpretation of data. Data was collected by use of the questionnaire which was used to solicit ideas related to the research problem from the respondents. Questionnaires were administered personally in the regional offices. Specifically, the questionnaires aimed at obtaining background information on Stima loan scheme.

The firm's financial reports and accounts as well as operations manual and procedure were also used as a source of secondary data.

Quantitative data obtained was expected to be reliable and covered the financial year 2010-2011 when the Stima loan project began, all through to financial year 2015. Qualitative data was analyzed using descriptive statistic such as frequencies, mean, variance and standard deviation. The SPSS (version 20) computer software was used in the analysis. A multiple regression analysis was applied to establish how credit risk and loan repayment affect profitability of Kenya Power.

$$\text{Eq. (1)} Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

### 3. Results and Discussions

#### 3.1 Regression Analysis

##### 3.1.1 Model summary

The model summary table shows the ability of the regression line to account for the total variation in the dependent variable.

**Table 3.1. Model goodness of fit.**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.782 <sup>a</sup>	.612	.579	.2337

a. Predictors: (Constant), Credit risk, Repayment period

From the determination coefficients, it can be noted that there is strong relationship between dependent and independent variables given an R values of 0.782 and R-square values of 0.612. This shows that 61.2% of the total variation in profitability is attributed to the changes in the explanatory variables (Repayment period and Credit risk).

##### 3.1.2 Analysis of variance

**Table 3.2. ANOVA.**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	4.952	4	.338	.623	.002b
Residual	9.085	37	.254		
Total	14.037	41			

a. Dependent Variable: Profitability

b. Predictors: (Constant), Credit risk, Repayment period

Analysis of Variance (ANOVA) was used to make simultaneous comparisons between two or more means; thus, testing whether a significant relation exists between variables (dependent and independent variables). This helps in bringing out the significance of the regression model. The ANOVA results presented in Table 3.2 shows that the regression model has a margin of error of  $p < .005$ . This indicates that the model has a probability of less than 0.2% of giving false prediction; this point to the significance of the model.

##### 4.5.3 Model coefficients

**Table 4.11. Regression Coefficients.**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.032	1.550		.012	.006
	Repayment period	0.170	.284	.030	.183	.004
	Credit risk	0.186	.394	.131	.782	.005

a. Dependent Variable: Profitability

$$Y = 4.032 + 0.170X_3 + 0.186X_4 + \varepsilon$$

According to the equation, taking all factors constant at zero, profitability will be 4.032.

The data findings also show that a unit increase in repayment period will lead to a 0.030 increase in profitability and a unit increases in credit risk will lead to a 0.131 increase in profitability

#### 4. Conclusions

From the findings, it was concluded that the higher the deposit amount the shorter the repayment period, shorter repayments/installments lead to high profits realized by Kenya Power and that small installment amount lead to longer maturity of loan. The study also concluded that the longer the maturity of loan the higher the income received by Kenya Power. Also the company prefers shorter maturity period to reduce default rates.

The study concludes that regular customers tend to be credit worth and that credit risk is higher when new customers are evaluated for connectivity. Also default rates are higher when new applicants are involved. It was concluded that default rates are mitigated by demanding higher deposits and that recovery is usually done on defaulting customers. However, stima loans are not only given to credit worth customers.

#### 5. Recommendations

The study recommends that the deposit amount should be fairly higher so as to shorten the repayment period since it was established that shorter repayments/installments lead to high profits realized by Kenya Power.

Finally, the study recommends that a stringent credit risk analysis should be performed on first time customers before connectivity. It is recommended that higher deposits should be set so as to minimize the credit risk.

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