

**EFFECT OF DEMAND SIDE FACTORS ON BORROWING DECISIONS OF PUBLIC
SERVICE EMPLOYEES IN KENYA**

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Declaration

This is my original work and has not been submitted in any other university or learning institution.

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

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Dedication

To my sons Felix Mutahi and Peter Ruoro Ichau; you have been my inspiration.

ABSTRACT

Access to finance is necessary in order to reduce income inequality and enable low-income households to escape from poverty. It leads to sustainable economic growth. This study therefore sought to determine the effect of demand side factors on borrowing decisions of public Service employees in Kenya. The variables examined were age, gender, level of education, number of financial dependants and level of income. The target population was employees of 262 state corporations spread across 18 ministries in Kenya. The sample for the study was 162 employees; 9 employees drawn from different state corporations under each of the 18 ministries. The study used primary data obtained through the use of semi-structured questionnaires. There were 97 respondents implying a 60% response rate. Regression, correlation and descriptive analysis of the data were conducted. All analyses were carried out at 5% level of significance. The study established that 78% of the respondents have taken a loan whereas 22% of the respondents have not taken a loan in the last three years. Age had a negative but insignificant effect on borrowing with a bigger percentage of young employees in the age bracket 21 – 40 years borrowing more compared to their elder colleagues in the age bracket 41-60 years. Gender had a negative but insignificant effect on borrowing with male employees borrowing more than their female colleagues. The level of education had a positive but insignificant effect on borrowing with the employees having higher academic qualifications borrowing more. The variables with a positive and very significant effect on borrowing were number of financial dependants and level of income. Employees with more financial dependants and earning high income had borrowed the most in the last three years. This study concludes that number of financial dependants and level of income have a significant positive effect on the borrowing decision of public service employees. Age and gender have a negative insignificant effect, while level of education had a positive insignificant effect. The researcher recommends more emphasis to be put on developing a competitive remuneration package for the public sector employees since salary has a significant effect on demand for and access to credit, and can have a direct impact on economic growth.

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LIST OF ABBREVIATIONS AND ACRONYMS

CBK	- Central Bank of Kenya
FSD	- Financial Sector Deepening, Kenya
GDP	- Gross Domestic Product
KIPPRA	- Kenya Institute for Public Policy Research and Analysis
KNBS	- Kenya National Bureau of Statistics
NSEC	- National Economic and Social Council
SACCO	- Savings and Credit Cooperative Society

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Access to credit has been used as one of the poverty alleviation strategies. This gained momentum upon the adoption of Millennium Development Goals by the United Nations Summit held in 2000. In this regard, credit has been used as an economic tool over time with the aim of addressing poverty challenges. For sustainable economic growth to be achieved, improved access to finance is necessary to reduce income inequality and enable low-income households to escape from poverty (Ayenew and Sewdie, 2010).

Private household credit is a major part of overall private sector credit in many countries and its importance has been increasing (Central Bank of Kenya, 2013). In Kenya, borrowing serves as an important means for consumption smoothing. Individuals are usually liquidity constrained because of high cost of living. Levine (2005) shows that household credit enhances economic growth by easing the liquidity constraints on households involved in entrepreneurial activities; this leads to formation of new firms and expansion of existing ones. In an endowed economy with fully rational agents, more access to credit improves welfare (Aiyagari, 1994). Characteristics of the borrower, legal framework, economic and cognitive biases in financial decision making may provide reasons to limit access to credit. Little research has been done on demand side factors that affect access to loans by public service employees.

1.1.1 Demand Side Factors

According to Chen and Chiivakul (2008), the decision to borrow depends on demand and supply factors. On the demand side, consumers' desire to borrow will determine their probability of participating in the credit market. On the supply side, lenders will decide whether and how much to lend, considering the capacity of the potential borrowers to repay. Actual debt observed is the result of both demand and supply factors. It will be lower than desired if consumers are not able to obtain the credit they want due either to quantity rationing or the high price of credit. Consumers who are not able to obtain as much credit as they want are credit constrained.

Bending, Giesbert and Steiner (2009) conducted a study to determine household demand for credit in Ghana. The findings indicated that the social economic status of households: assets, schooling, land per capita in acres, employment and remittances; were positively related to credit demand, while female headship, exposure to shock such as illness and death were negatively and significantly correlated with credit demand. In the study, remittances were a significant factor as they represented additional income source and collateral enabling households to borrow.

This study seeks to determine the extent to which variations in loans taken by Public Service employees in Kenya can be explained by variations in demand side factors, specifically individual characteristic such as age, gender, education, family size and income. Net wealth is the proxy for endowment of the household and is calculated as the total wealth less the standing sum of all the loans that have been repaid by the household in the reference period. Wealth is calculated as the sum of the value of all assets. Income variable will be measured by the average monthly salary of the employee.

1.1.2 Borrowing Decisions

Borrowing is the temporary acquisition of money with the intent to repay the amount borrowed. The common form of borrowing happens between a consumer and a lending party, usually a financial institution, either via a loan or via another form of credit such as a credit card. A loan is a contract between two parties where one party borrows money from the other on the premise that they will pay it back. Commercial banks issue two types of loans; secured and unsecured loans. Secured loan uses an asset such as a house or a car as collateral. Unsecured loans are a form of debt given to borrowers without collateral as long as the borrower has proved of regular income. These loans are obtained to meet personal needs such as durable goods, finance education, medical care and other expenses (FSD & CBK, 2007).

The Keynesian model of output determination argues that aggregating demand (total output of goods and services demanded in the economy) determines output or economic growth (Dornbusch, Krugman and park, 1998). The model further suggests that consumption and investment are usually the biggest components of aggregate demand. Thus, any factors leading to increase in these two components should stimulate aggregate demand and consequently economic growth. According to McKinnon (1973), an increase in household credit raises the demand for consumption and the demand for investment goods. His findings support the assertion that household borrowing to finance consumption and purchase of capital goods adds to the productive capacity of an economy which leads to economic growth. Jappelli and Pagano (1994) argued that greater availability of household credit reduces private savings and economic growth.

1.1.3 Demand Side Factors and Borrowing Decisions

Economists have attempted to explain consumer behavior on demand for a commodity using different theoretical and empirical economic concepts. A large number of social-economic factors play an important role in determining demand for a commodity by an individual. Credit is an important commodity for improving the welfare of the poor especially in developing countries (CBS-GOK, 2003).

Livingston and Ord (1994) argued that the amount an individual wishes to buy of a commodity depends on several factors such as taste and preferences, which may be influenced by factors such as age, sex, education or religion; and also the price of the commodity. In the credit market, this consideration is on implicit and explicit costs of credit, which are added costs to business operators or individuals and have to be considered when making a decision to borrow or not to borrow and from which source. According to Wabei (2012), credit demand is higher with an increase in the size of household, age and education. Furthermore, remittances received and urban residence increases the probability of borrowing. Further, the probability of borrowing declined when a household was headed by a female or had low level of expenditure.

1.1.4 Public Service Employees in Kenya

A public service employee is a household member employed by the public service sector. A household refers to a person or a group of people living in the same compound, answerable to the same family head and sharing a common source of food and income (KNBS, 2005/2006). The Public service sector in Kenya offers a significant percentage of job opportunities for the Kenyan market.

There is evidence that individuals take up loans from various sources to finance development projects as well as to acquire assets. Public service employees form the largest group of employees that borrow from commercial banks and other financial institutions. These loans are payable over a maximum period of 72 months, with interest rates varying from 14% to 24%. The security for the loans is the pay slip and the lenders seek an assurance from the employer that the loans will be deducted at source, commonly referred as check-off system (Bochaberi, 2007).

According to KIPPRA (2013), an in-depth analysis of civil service pay reveals disparities in the structures. On the average, an individual in the lowest job-group (A) earns one percent of the basic salary of the highest earner in the service, Job group (V).The distribution of allowances follows a similar trend such that an individual in the lowest job group earns the least. Allowances also constitute a very high proportion of gross salary across the job groups, being comparatively attractive for the higher cadres. Such allowances include house, entertainment, transport, non-practicing, and extraneous allowances. The disparities in income by the public service employees affect their ability to participate in the credit market.

1.2 Research Problem

According to Demigurck – Kunt, Beck and Honoham (2008), access to finance is the possibility that individuals or enterprises will make use of financial services such as credit deposit, payment, insurance and other risk management services. Access to finance was distinguished from the actual use of financial services, because non use of finance can be voluntary or involuntary. Ochieng' and Kaijage (2015) explain that voluntary non users of financial services have access to but do not use financial services either because they have no need for those services or

because they have decided not to make use of such services due to cultural, religious or other reasons. Literature indicates that there exists a financing gap between credit demand by individuals or firms and its supply. A financing gap can be as a result of demand side factors or supply side factors. Beck (2007) established that both the supply side and demand side factors are important since they complement each other in most cases and should therefore be addressed concurrently for the efficient use of funds by individuals.

Fanwell (2001) analyzed factors that affect household demand for credit in Malawi. The results indicated that credit demand was positively and significantly dependant on household expenditure and family size. Rweyemamu et al (2003) also examined the determinants of credit demand in Tanzania. They found that credit demand is negatively affected by borrowing transaction cost. Keider (2000) analyzed the determinants of access to household credit and loan amount in Ethiopia. The study found that current household resources, schooling of household head, value of assets, collateral, number of dependants, marital status and age as significant factors. Bending et al., (2009) used a multivariate probit model to simultaneously determine household demand for credit in Ghana. Their findings indicated that the social economic status of households were positively related to credit demand, while female headship and exposure to shocks were negatively and significantly correlated with credit demand.

Locally, to the researcher's understanding, limited studies have been done on the borrowing decision by public service employees. Nangila (2013) examined the effect of unsecured personal loans on household welfare of secondary school teachers in Bungoma. The study established that unsecured personal loans improve household welfare for Secondary school teachers in Bungoma

County. Wangai and Messah (2011) analyzed factors that influence the demand for credit among the small scale entrepreneurs in Meru Central District. The study found that, holding other factors constant, there was always demand for additional finances to meet household utilities. However, the study observed that the entrepreneurs with low levels of income demand less credit due to limited resources available to them through their low savings. Chebet (2014) conducted a study to determine the effects of selected macroeconomic variables on the demand for credit by private sector in Kenya. The study established that public investment, short-term interest rate, long-term interest rate, employment and domestic debt have positive effect on demand for credit whereas per capita GDP and exchange rate have negative effect on demand for credit by the private sector. Based on the foregoing, there is a gap in literature that warrants a research to be conducted in order to investigate borrowing decisions by public service employees in Kenya.

1.3 Research Objective

This study seeks to examine the effect of demand side factors on borrowing decisions of public service employees in Kenya.

1.4 Value of the Study

The research will help in bridging the literature gap in the field of credit with respect to public service employees. Government policy makers, commercial banks and scholars will benefit from this study.

The Kenya's National Economic and Social Council highlights access to finance as a priority intervention strategy to tackle the high unemployment rate in the country (NESC, 2010). This

study will therefore provide useful information on the economic forces and their magnitude of influence on demand for credit by public service employees in Kenya. From the findings, policy makers will be able to prepare alternative policies which will aid in increasing access to credit in Kenya and therefore promote entrepreneurship, employment and income generation.

This research will also enable policy makers in commercial banks to appreciate the effect of demand side factors on borrowing decisions by public service employees and develop customized products that will enhance credit sales and lead to improved profitability. Scholars will use the information in this study as part of their literature review while carrying out further research on credit.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter provides information gathered from selected literature and articles on credit and the demand for credit by households. The factors considered include income, wealth, interest rate and government policy controls.

2.2 Theoretical Literature Review

A number of theories have been advanced in an attempt to explain the borrowing decisions of households. These include: lifecycle model, Permanent income hypothesis, Pecking order theory and Credit channel theory.

2.2.1 Lifecycle Model

Life Cycle Model hypothesized “„that consumption and saving decisions of households at each point of time reflect a more or less conscious attempt at achieving the preferred distribution of consumption over the life cycle , subject to the constraint imposed by the resources accruing to the household over its lifetime” (Modigliani, 1966). According to this Model, households make decisions on consumption based on both their available resources over time and on their current status. The theory further argues that individuals accumulate wealth at the initial stages of their working period which will eventually be used to support their future consumption (Ibid).

In developing countries, savings are low compared to developed countries. As a result, little is available for investment to build on assets that will aid in smoothing consumption at an acceptable level even in future. According to this hypothesis, consumers are expected to smooth their consumption patterns over their life time to maximize utility despite the fluctuating income (Soman & Cheema, 2002). Consumers can smooth their consumption by using the savings from past income or investment in the future income in the present if only they have access to consumer credit in exchange for repayment in the future. With availability of credit, the transitory income shocks will be smoothed away by borrowing and saving hence consumption patterns will remain unaffected in the future (Morduch, 1995).

According to Soman & Cheema (2002), “Consumers are unable to correctly value their future incomes, and that they lack the cognitive capability to solve the inter-temporal optimization problem required by the life-cycle hypothesis”. As a result, information on credit limit helps individuals to make inter-temporal choice. For example, if consumers can access larger amounts of credit, then they are likely to conclude that their future incomes will be high and therefore are motivated to borrow more. On the other hand, consumers who access lower amounts of credit may conclude that their future incomes will be low and therefore their spending will be equally low.

2.2.2 Permanent Income Hypothesis

Permanent income hypothesis is a theory of consumption where consumer’s behavior is mainly explained by the variations in permanent income expectations rather than variations in temporary income. It assumes that households have opportunity to borrow (perfect capital markets). The theory argued that, consumer’s current consumption depends on expected consumption in the

future period which the later depends on the characteristics of individuals. The hypothesis further argues that individual's real wealth strongly influences consumption and not his current real disposable income. Furthermore, transitory or temporary changes in income have little effect on consumer spending behavior, whereas permanent changes can have large effect on consumer spending behavior (Hall, 1978).

Friedman, (1957) found that, measured income and consumption are composed of permanent and transitory elements. Furthermore, permanent income expectations have different impact on the consumption of different households; low income earners will have a higher propensity to consume compared to high income earners (Ibid). Therefore, with availability of information regarding the current and future earnings, credit plays a major role in smoothing consumption especially with the low income population.

2.2.3 Pecking Order Theory

Pecking Order Theory seeks to explain how companies prioritize their financing sources, as well as how the business makes financial decisions. The theory argues that adverse selection implies that retained earnings are better than debt and debt is better than equity. Myers (1984) suggests that a firm is said to follow a pecking order if it prefers internal to external financing and debt to equity of external financing is used. Myers proposed a "pecking order" in securities in which insiders are better off issuing safe securities such as debt when the market recognizes their informational superiority.

The theory was popularized by Myers and Majluf (1984) when they argued that equity is a less preferred means to raise capital. The theory assumes that management acts in the interest of existing stockholders and are passive, and do not adjust their portfolios in response to the firm's issue-invest decision, except possibly to buy a predetermined fraction of any new issue. With this assumption about management's objective, firms will prefer debt to equity if they need external funds (Ibid).

2.2.4 Credit Channel Theory

Credit channel theory is a theory of transmission mechanism of monetary policy. This can be clearly explained by the bank lending channel and the balance sheet channel (Bernanke and Gertler, 1995). According to Thornton (1994), both of these channels are based on lending problems associated with asymmetric information and control. The cost of acquiring information and controlling borrowers' behavior drives a wedge between the cost of internal and external finance. According to this hypothesis, monetary policy actions induce changes in interest rates and prices, affecting the borrowers' balance sheets.

The size of external finance premium is determined by the borrower's financial position, but existence of imperfect information in the credit markets amplifies it more resulting in a deadweight costs associated with the Principal-Agent problem existing between lenders and borrowers (Ibid). According to the 'credit view', a change in monetary policy that raises or lowers open-market interest rates tends to change the external finance premium in the same direction (Thornton, 1994). As a result of the effect of tightened monetary policy on the external

finance premium, the cost of borrowing increases, while real GDP declines. Eventually, borrowings also decline due to high premiums for external finance.

2.3 Factors that Influence Borrowing Decisions

A number of factors are considered as having an influence on borrowing decisions of individuals or households. These include: age, gender, level of education, family size, disposable personal income, wealth and interest rates.

2.3.1 Age

Age of an individual is positively related to the decision to apply for credit and the amount of credit applied for. Following the Life-cycle hypothesis, the young and energetic individuals with ambitions to earn higher incomes are expected to be more active in terms of savings in order to accumulate wealth. The life-cycle hypothesis predicts that the old are likely to rely more on the past savings and accumulated wealth for consumption. Those at intermediate ages (18-40 years) have positive and significant demand, while the old are less inclined to demand for credit, particularly from the formal and the semi-formal sources.

The young may tend to save or borrow more for investment while the old may be less inclined to save and borrow (Mpuga, 2004). Old headed households have less ability to smooth consumption by themselves if they face adverse shocks, as they do not have enough working household members to increase income by increasing labor working hours (Kochar, 1997).

2.3.2 Gender

Men and women engage in different economic activities, which have different implications on their demand for credit. Social roles and norms dictate the segregation of activities by gender where women mostly concentrate on farm activities and household chores while men undertake income-earning activities because those are largely what society prescribes for them (Ihahi, 2001a; 2001b). This is intensified by the differential power relations between men and women where women have virtually no control of assets such as land, animals and buildings that could be used as collateral. As a consequence the probability of demanding credit is negatively correlated with being female-headed household (Bending et al., 2009). Single headed households are often considered “less lucky” or disadvantaged and thus have difficulties in social networks. Married couples could be given more credit because they are less mobile and loan may be jointly underwritten. Singles are 3.4% more likely to be constrained than married couples (Jappelli, 1990).

Wabei (2012) found that there was gender discrimination in the demand for credit. More male-headed households are served by commercial banks and micro-finance institutions than females. Statistics showed that 0.8% of women have household credit, while 2.2% of men are able to access credit through a bank (Melzer, 2009).

2.3.3 Education

Tang, Guan and Jin (2010) established that education is one of the important variables that affect households' demand for farm credit. In their finding, they showed that one additional year of education would increase the probability of borrowing by 2.5 percent and doubling land

endowment would increase the probability by 5.6 percent. The impact of these factors was not the same rather; it varied considerably by the kind of financial institutions. Chen and Chiivakul, (2008) found that education at primary and secondary level may affect positively, but at four-year university level, education has a negative and insignificant effect.

Wangai and Messah (2011) found education level to be an important element that has a positive impact on a small scale entrepreneur's demand for credit. The strength of its impact was shown to increase with educational attainment so that entrepreneurs with higher education were more inclined to seek for external funds. A major reason why formal lending institutions perceive small and micro enterprises as high risk borrowers is usually the difficulty involved in obtaining adequate information from their book keeping on which the lenders can base assessments. Since financial statements are a key requirement by formal credit institutions, presumably small and micro enterprises' operators with higher education level, accounting knowledge, better business management skills, and capability of absorption and adoption of technology give them an added advantage when it comes to credit borrowing.

2.3.4 Family Size

Entrepreneurs with large families are less likely to borrow credit from a formal institution compared to those with few dependants. The higher the number of dependants, the more are the other consumption needs suggesting that the ability to save income and subsequent repayment of a loan is limited. This was revealed by low demand for credit among large family households (Wangai and Messah, 2011). According to Mpuga (2004), individuals with large households are not likely to demand for credit from either informal or formal credit market, suggesting that their

ability to participate in credit markets can only be improved through government initiatives of strengthening both macro and micro economic environments.

A study by Nwaru (2011) indicated that there is no relationship between dependency ratio and credit demand but found that migration, death of a family member and bad harvest had positive effect on demand for credit. Salary income, sick days and distance from the village positively affect demand for credit from the informal source. According to Oluwasola and Alimi (2008), there is a positive and significant relationship between demand for credit and family size. They established that large families are likely to demand more credit, and financial institutions prefer giving credit to large families because of their large capacity to invest.

2.3.5 Disposable Personal Income

Disposable personal income measures the level of income received by persons from all sources after taxes have been deducted over a time period. The level of income is an important factor that determines demand for credit. Individuals may desire a higher debt while they are in a higher current income level and this may be the individual's rational decision as these individuals have higher future income expectations (Chen and Chiivakul 2008). This means that at low levels of income, the household has limited resources to save and less demand for credit than at higher levels of income. However, another explanation shows that when individual's income is very low, the marginal utility of consumption is very high, leading to high demand for credit.

Bending et al., (2009) argued that asset endowment and regular employment status enhance financial services uptake. Households that receive remittances do not show demand for

microcredit. This supports the widespread assumption that poorer households are more likely to be excluded from the formal financial institutions than better-off households who are characterized by high and steady incomes and assets (Mohieldin and Wright, 2000).

Jhingan (2001) highlighted the application of the Keynesian Theory given by J.M Keynes (1891) to underdeveloped countries on the relationship between consumption and income. He pointed out that one of the important tools in Keynesian theory was the propensity to consume. When income increases, consumption increases, but by less than the increment in income. According to Long (1968), the relationship between income, consumption and savings does not hold in underdeveloped countries because people are too poor ; when their income increases, they spend more on consumption because their tendency is to meet their unfulfilled wants.

2.3.6 Wealth

Magri (2002) argued that net wealth as an indicator of household's current and future endowment is a major determinant of credit demand. Whenever households' endowment grows, households can automatically finance a greater share of their desired consumption and their demand for credit may reduce. At the intermediate level of individual's wealth, an increase in endowment can increase the consumption need and therefore the demand for credit increases. According to the study, it was found that the values of assets have significant and positive effect on the desired debt. At maximum level, the relation between demand for credit and the value of asset and desired debt was found to be negative (Chen and Chiivakul, 2008)

2.3.7 Interest Rate

Amanoo, Acquah and Amash (2003) examined empirically the relationship between interest rates and the demand for credit as well as interest rates and loan repayment by the poor and SMEs in the rural region of Ghana. Regression analysis based on ordinary least squares procedure was used to establish the relationship. The results indicated that interest rates negatively affect the demand for credit. In addition, interest rates also have negative effect on loan repayment. The study further observed that this relationship is brought about by SMEs' aversion to acquiring credit due to high interest rates (Ibid).

Pani (1966) formulated an econometric model which helped to investigate the propensity of different classes of households to borrow in relation to changing interest rates on cash loans, certain expenditures, etc. The broad conclusions of his analysis based on the Reserve Bank of India (RBI) district level were that the average household's demand for credit is not wholly inelastic (this is responsiveness of demand to a change in price where with change in price, demand remains the same). In addition, the value of assets held by the household does not by itself seem to be significant in explaining demand behavior.

David (2001) argued that when the cost of credit goes up, the marginal utility per shilling raised from that credit goes down. The household therefore chooses to consume, or use less of the credit. The concept of utility and marginal utility used by economists explain consumer demand on a commodity. Utility is the capacity or power of a commodity to satisfy the desire of a user (Lisper et al., 1987). Any commodity that satisfies human wants has utility, for example, if credit borrowed will satisfy financial needs of a household, then the credit has utility (saleemi, 2000).

2.4 Empirical Studies

Researchers have tried to estimate the effects of demand side factors on household borrowing. Each study differs in objective and therefore in the models and the variables under examination.

Kedir (2000) analyzed the determinants of access to household credit and loan amount in Ethiopia. A probit model and a tobit procedure which controls for potential non-randomness/selectivity bias in observing borrowing households was applied in the study. The study found households who lived in the urban areas of Addis Ababa are more likely to borrow relative to those in rural areas. The study also found that current household resources, schooling of household head, value of assets, collateral, number of dependants, marital status and age as significant factors.

Fanwel (2001) analyzed factors that affect household demand for credit in Malawi. The study covered 404 households. The analysis used Ordinary Least Squares estimation of the extent of credit demand, and finally a probit analysis. The results indicated that credit demand was positively and significantly dependent on household expenditure and family size. This was as a result of larger family size exerting stress on the household, which is mostly reflected through an increased probability of borrowing.

Pitt and Jhander (2002) identified gender and the education level of the household heads as having a significant effect on credit demand. Education is an important factor in determining credit demand as lenders prefer higher-educated customers because they usually have higher income and therefore, a smaller default risk. Jabbar et al., (2002) identifies family size, primary

economic activity of the household head and interest rate as additional determinants of the demand for formal credit. Zeller and Sharna (2002) point out that borrowing during adverse times is an integral part of the livelihood system of households in developing countries.

Rweyemamu et al., (2003) examined the determinants of credit demand in Tanzania. Demand for credit was hypothesized as being determined by household size, years of schooling of household head, household income, expenditure, and borrowing transaction costs. Through a regression analysis, they found that credit demand is negatively affected by borrowing transaction costs. They further found that demand for credit was positively influenced by household size, years of schooling of household head, expenditure and household income. The study argues that the increase in credit demand as a result of more years of schooling is associated with more productive jobs and more incomes, while the increase of credit demand as a result of higher level of expenditure is associated with households' desire for more income to meet their desired consumption.

Mpuga (2004) analyzed demand for credit in rural Uganda. Using the household surveys data for 1992/93 and 1999/2000, a probit estimation model on demand for credit showed that individual characteristics have important implications on demand for credit applied for. Age, gender, marital status, household size, income and education levels are the individual's attributes.

Barslud and Tarp (2008) found countervailing impacts of education, number of dependants, assets, credit history and secure land rights on the demand for formal and informal loans, but most of the mentioned variables (except for assets) have a statistically significant effect only on

either formal or informal credit demand. Other variables, such as connections to credit institutions, exhibit a positive significant impact on the demand for both formal and informal loans.

Kumar (2008) also investigated whether consumption expenditure determined credit demand in Uttar Pradesh (UP) and Bihar. Ordinary Least Squares (OLS) was used to analyze the data and since the dependent variable (credit demand) also had zero values, truncated regressions were also run using the Tobit model. The regression results indicated that medical expenses and family size were positively correlated with credit demand, while family daily wage and remittances negatively correlated with credit demand. In this study, unlike the one done by Bending, et al., (2009) in Ghana, it can be seen that the relationship between remittances and credit demand is negative and remittances now act as substitutes for loans. This entails that the direction of the relationship between remittances and household borrowings is ambiguous.

Wangai and Messah, (2011) analyzed factors that influence the demand for credit among the small scale entrepreneurs in Meru Central District. To achieve this, the researchers employed both descriptive and logistic regression models. While holding other factors constant the study found that there is always demand for additional finances to meet household utilities. However the study observed that the entrepreneurs with low levels of income demand less credit due to limited resources available to them through their low savings. To satisfy their numerous needs, low income earners may complement their financing with those from the informal sectors. Furthermore, the study also observed that with the high levels of income, the entrepreneurs also increase savings which allow them accumulate assets that can be used as security for loans

(Ibid). This is confirmed by Gattin-Turkalj, et al (2007) who also found that loans are positively related to the real GDP and negatively related to the real interest rates.

Wabei (2012) analyzed the determinants of household credit demand in Zambia. Using a sample size of 20,000 households from the Living Conditions Monitoring Survey of 2006, a probit model showed that credit demand was higher with an increase in the size of household, age and education. Remittances received and urban residence also increased the probability of borrowing. The study also established that the probability of borrowing declined when a household was headed by a female or had low level of expenditure.

Nangila (2013) investigated the effect of unsecured personal loans on household welfare of secondary school teachers in Bungoma County. Ordinary Least Squares was used to analyze the data. He established that most teachers who had taken unsecured loans were women. Majority of those who had taken unsecured personal loans were found to be between the ages of 31-40 years. This is the age at which most people are active and involved in activities to make their financial status stable in future. It was also determined that most teachers preferred borrowing from commercial banks as opposed to SACCOs and micro financial institutions. This is because of flexible repayment period and ease of accessibility for top up loans. Most teachers borrowed unsecured personal loans to improve their homes and educate their family members.

2.5 Summary of the Literature Review

From the literature review, several studies on demand for household credit have been done by various researchers. Studies reviewed show that different writers have used different variables

and different methods of analysis. As regards variables influencing demand for credit, most reviewed studies have included current household resources, schooling of household head, asset value, collateral, number of dependants, marital status and age as significant factors. Some of the empirical studies found that medical expenses and family size were positively correlated with credit demand, while family daily wage and remittances negatively correlated with credit demand.

However, most of the reviewed studies have been done outside Kenya and the results may not adequately address the Kenyan economic situation. Furthermore, there is no much research specific to public service employees. Thus, there is a need to carry out a study based in Kenya in order to come up with issues especially on the factors influencing demand for credit by public service employees.

CHAPTER THREE

RESEARCH METHOTHOLOGY

3.1 Introduction

This chapter presents the appropriate research design that was used to conduct the study. The main areas of focus in this chapter are research design, population target of the study, sample size, data collection, and data analysis.

3.2 Research Design

A descriptive survey was used to determine the effect of demand side factors on borrowing decisions of Public Service employees in Kenya. Descriptive research portrays an accurate profile of persons, events, or situations (Robson, 2002). It is used to obtain information concerning the current status of the phenomena to describe what exists with respect to variables or conditions in a situation. It is the most appropriate design to investigate the effect of demand side factors on borrowing decisions because it intends to come up with findings that accurately describe the relationship between demand side factors and borrowing decisions of Public Service employees in Kenya.

3.3 Population

A population is an entire group of individuals, events or objects having common characteristics that conform to a given specification (Mugenda & Mugenda, 2003). According to Saunders (2003), the population is the full set of cases from which a sample is taken. The study population

was employees of the 262 State Corporations in Kenya (Report of the Presidential Taskforce on Parastatal Reforms, 2013).

3.4 Sample

Stratified random sampling was used to select representative State Corporations categorized based on the Government Ministry they fall under as per the Report of the Presidential Taskforce on Parastatal Reforms, 2013. Slovin's formula shown below was used for sample size determination (Ryan T.P, 2008)

$$n = \frac{N}{1 + N(e)^2}$$

A sample of 162 employees was drawn from the various state corporations. For equal representation of ministries, 9 respondents were picked from different state corporations within a ministry. Thus, the study targeted 9 respondents from each of the 18 ministries making it a total of 162 respondents.

3.5 Data Collection

The study used primary data. Primary data is information gathered directly from the respondents (Kothari, 2004). The data was collected using a semi-structured questionnaire administered to the 162 employees. The questionnaire sought to obtain information regarding the borrower's profile, amount of loan borrowed in the last three years, and the borrower's average monthly income.

3.6 Data Analysis

The study adopted Calza et al., (2001) model with modification to capture other variables of interest to the study. The adoption of the model was informed by its incorporation of interest rates and individual characteristics as the determinants of demand for credit to Public Service employees.

Descriptive statistics and Regression were used in the analysis of data. Descriptive statistical method was used to explain the characteristics of the employee and presented using tables and percentages. A regression model was used to measure the percentage change in the dependent variable as result of 1% change of each independent variable.

3.6.1 Empirical Model

Y, the amount borrowed is the dependent variable. The independent variables are the employee characteristics. The variables were factored in the multivariate regression model expressed as;

$$Y = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \varepsilon$$

Where,

X_1 = Age: measured by the age bracket of the employee; assigned dummy values where 1 represents age bracket 21–30 years, 2 represents age bracket 31-40 years, 3 represents age bracket 41-50 years and 4 represents age bracket 51-60 years.

X_2 = Gender: measured by the gender of the employee; assigned dummy values where 1 represents male and 2 represents female.

X_3 = Education: measured by the highest level of the employee education; assigned dummy values where 1 represents O level, 2 represents Diploma, 3 represents Degree and 4 represents Postgraduate.

X_4 = Family size: measured by the number of financial dependants of the employee; assigned dummy values where 1 represents 1 dependant, 2 represents 2 dependants, 3 represents 3 dependants, 4 represents 4 dependants, 5 represents 5 dependants and 6 represents 6 or more dependants.

X_5 = Income; measured by the average monthly salary of the employee in Kenya shillings; assigned dummy values where 1 represents an average monthly income below 30,000, 2 represents income bracket 31,000 – 60,000, 3 represents income bracket 61,000 – 90,000, 4 represents income bracket 91,000 – 120,000, 5 represents income bracket above 120,000

ε is the Error term

α is the intercept

3.7 Test of significance

Test of significance checks the relative amount of variance of the dependent variable that is explained by the independent variables. Coefficient of determination, (R^2) was used. A higher percentage implies that the independent variables explain well the dependent variable while a low percentage implies the reverse.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

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

4.2 Response rate

A total of 162 questionnaires were administered out of which 97 respondents filled in and returned representing a 60% response rate. This was considered sufficient to enable the researcher generalize the findings of the study.

4.3 Respondents Bio-data

Table 4.1 Gender

		Amount borrowed (Kshs.)						Total	Percent
		Below 100,000	100,000 - 300,000	300,001 - 600,000	600,001 - 1,000,000	Above 1,000,000			
Gender of respondent	Male	6	8	14	12	12	44	57%	
	Female	6	12	6	4	4	32	43%	
Total		12	20	20	8	16	32	100%	

Source: Researcher (2015)

Table 4.1 above indicates that 57% of the respondents who had borrowed a loan in the last three years were male and 43% were female. This shows that more males took up loans over the period as compared to their female counterparts.

Table 4.2 Age

		Amount borrowed (Kshs.)						Total	Percent
		Below 100,000	100,000 - 300,000	300,001 - 600,000	600,001 - 1,000,000	Above 1,000,000			
Age of respondent (Years)	21-30	6	2	4	0	2	14	18%	
	31 - 40	4	18	14	4	6	46	61%	
	41 - 50	2	0	2	4	8	16	21%	
Total		12	20	20	8	16	76	100%	

Source: Researcher (2015)

Table 4.2 above indicates that 18% of the respondents were in the age bracket 21-30 years, 61% in the age bracket 31 – 40 years and 21% in the age bracket 41 – 50 years. None of the respondents were in the age bracket 51 – 60 years. It also indicates that majority of the employees in the public sector are aged between 31 and 40 years.

Table 4.3 financial dependants

		Amount borrowed (Kshs.)						Total	Percent
		Below 100,000	100,000 - 300,000	300,001 - 600,000	600,001 - 1,000,000	Above 1,000,00			
Number of financial dependants	1	6	2	4	2	0	14	18%	
	2	2	6	6	0	0	14	18%	
	3	2	6	4	2	4	18	24%	
	4	2	4	4	0	4	14	18%	
	5	0	2	0	4	4	10	13%	
	6 or more	0	0	2	0	4	6	8%	
Total		12	20	20	8	16	76	100%	

Source: Researcher (2015)

As shown in table 4.3 above, 18% of the respondents have one financial dependant, 18% two financial dependants, 24% three financial dependants, 18% four financial dependants, 13% five financial dependants and 8% six or more financial dependants.

Table 4.4 Level of education

		Amount borrowed (Kshs.)						Total	Percent
		Below 100,00	100,000 - 300,000	300,001 - 600,000	600,001 - 1,000,000	Above 1,000,00			
Level of education	O level	4	2	0	0	0	6	8%	
	Diploma	4	4	8	2	2	20	26%	
	Degree	4	4	6	6	4	24	32%	
	Postgraduate	0	10	6	0	10	26	34%	
Total		12	20	20	8	16	76	100%	

Table 4.4 above shows that 8% of the respondents have attained O level of education, 26% diploma level, 32% hold a degree, and 34% have postgraduate. This implies that above 50% of the workforce in the public sector degree holders.

Table 4.5 Average income

		Amount borrowed (Kshs.)						Total	Percent
		Below 100,000	100,000 - 300,000	300,001 - 600,000	600,001 - 1,000,00	Above 1,000,00			
Average income (Kshs.)	Below 30,000	8	0	2	0	0	10	13%	
	31,000-60,000	2	8	10	2	0	22	29%	
	61,000-90,000	2	6	0	2	2	12	16%	
	91,000-120,000	0	2	8	0	2	12	16%	
	Above 120,000	0	4	0	4	12	20	26%	
Total		12	20	20	8	16	76	100%	

Source: Researcher (2015)

As shown in table 4.6 above 13% of the respondents were earning less than Kshs. 30,000, 29% fall in the income bracket Kshs. 31,000-60,000, 16% in the income bracket Kshs. 61,000-90,000, 16% in the income bracket Kshs. 91,000-120,000 and 26% earn above Kshs. 120,000

Table 4.6 Amount borrowed

Variable	Response	Frequency	Percent
Amount borrowed	Below Kshs. 100,000	12	12%
	Kshs. 100,000 - 300,000	20	21%
	Kshs. 300,001 - 600,000	20	21%
	Kshs. 600,001 - 1,000,000	8	8%
	Above Kshs. 1,000,000	16	16%
	Zero loan amount	21	22%
Total		97	100%

Source: Researcher (2015)

As shown in table 4.1 above, 76 out of the 97 respondents had borrowed a loan in the last three years representing 78%, while 21 respondents had not borrowed a loan in the last three years representing 22%. 12% of the respondents had borrowed a loan of less than Kshs. 100,000, 21% between Kshs. 100,000 -300,000, 21% between Kshs. 300,001 - 600,000, 8% between Kshs. 600,001 - 1,000,000 and 16% above Kshs. 1,000,000

4.4 Normality Test

A Shapiro-Wilk test was conducted to determine if the data was well modeled by a normal distribution. The detailed results are as shown in appendix 2. Data on age bracket, level of education, number of financial dependants, level of income and amount borrowed was generally found to be normally distributed with a sig. value greater than 0.05. Data on gender was not normally distributed with a sig. value less than 0.05.

4.5 Correlation Analysis

The findings presented in table 4.7 indicate age of the respondent is positively correlated with the number of financial dependents ($r=0.668$) and average income ($r=0.428$). This implies that the older the respondents tend to have more financial dependants. Older respondents also earn higher average income. The level of education has a positive correlation to average income ($r=0.585$). This implies that respondents with higher academic qualification earn higher average income.

Average income, number of financial dependants and level of education have a positive correlation, while gender and age have a negative correlation with the amount borrowed. This implies that highly educated respondents with higher average income and more financial dependants borrow more while females and older respondents borrow less.

Table 4.7 Correlation between variables

	Gender	Age	Dependants	Education	Income	Amount
Gender	1					
Age	-0.199	1				
Dependants	-0.074	0.668	1			
Education	0.000	0.010	0.069	1		
Income	-0.110	0.428	0.343	0.585	1	
Amount Borrowed	-0.203	-0.403	0.500	0.362	0.633	1

Source: Researcher (2015)

Table 4.8a Model summary - Demand side factors and Borrowing

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.713 ^a	.509	.474	.990

Source: Researcher (2015)

Adjusted R squared is coefficient of determination which indicates the variation in the dependent variable due to changes in the independent variables. From the findings in table 4.8a above, $R^2=0.509$ an indication that at 95% confidence interval, changes in age, gender, level of education, number of financial dependants and average income of an employee explain 50.9% of the variation in the amount borrowed. R is the correlation coefficient which shows the relationship between study variables. Findings from table 4.8a above show $R=0.713$ implying a strong positive relationship between the study variables.

Table 4.8b Analysis of variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	71.153	5	14.231	14.513	.000 ^b
	Residual	68.636	70	.981		
	Total	139.789	75			

Table 4.8b above shows that the model has a significant F-statistic ($F=14.513, p=0.00$). This confirms that at least one of the independent variables contributes to the variation in the dependent variable.

Table 4.8c Regression coefficients

Model	Un-standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.012	.719		1.408	.164
Age bracket of respondent	-.159	.271	-.073	-.585	.560
Gender of respondent	-.267	.241	-.097	-1.110	.271
Level of education	.017	.162	.012	.103	.918
Number of financial dependants	.323	.103	.363	3.151	.002
Average income	.503	.118	.526	4.254	.000

The final model can therefore be rewritten,

$$Y = 1.012 - .159X_1 - 0.267X_2 + 0.017X_3 + 0.323X_4 + 0.503X_5$$

From the above regression equation, it was established that holding age, gender, level of education, number of financial dependants and income to a constant zero, the amount borrowed would be at 1.012.

Age of the respondent had a negative but insignificant effect on borrowing. A unit increase in age would lead to a decrease in amount borrowed by a factor of -0.159. The implication is that age of an employee is negatively related to the decision to apply for credit. This is in line with the Life-cycle hypothesis; the young and energetic individuals with ambitions to earn higher incomes are expected to be more active in saving in order to accumulate wealth. The hypothesis predicts that the old are likely to rely more on the past savings and accumulated wealth for consumption and are less inclined to demand for credit.

Gender had a negative but insignificant effect on borrowing. A variation in gender from male to female would lead to a decrease in amount borrowed by a factor of -0.267. This implies that gender of an employee is negatively correlated with the decision to apply for credit. This may be attributed to the difference in preference between men and women. Women tend to demand for credit less compared to their male counterparts.

Level of education had a positive but insignificant effect on borrowing. A unit increase in level of education would lead to an increase in amount borrowed by a factor of 0.017. This implies a positive correlation between the level of education and the decision to borrow. Employees with higher level of education had more loans since they earn more income, and have a higher ability to repay.

The number of financial dependents had a positive significant effect on borrowing. A unit increase in number of financial dependants would lead to an increase in amount borrowed by a factor of 0.323. This implies that there is a positive correlation between number of financial dependents and the decision to borrow. Employees with more financial dependants borrow more loans compared to those with fewer financial dependants. The higher the number of financial dependants, the more the responsibilities and consumption needs making them to borrow more.

The level of income had a positive significant effect on borrowing. A unit increase in level of income would lead to an increase in amount borrowed by a factor of 0.503. Individuals at higher levels of income desire a higher debt because they have higher future income expectations. Furthermore, when income increases, consumption increases. This is in line with Keynesian theory on consumption.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of research findings, conclusion and recommendations. It also provides suggestions for further research.

5.2 Summary of findings

This study sought to establish the effect of age, gender, number of financial dependants, level of education and average income on borrowing decisions of public service employees in Kenya. The study focused on employees of the various state corporations in Kenya and their borrowing decisions over the last three years from July 2012 to June 2015. Data on employees' profiles was obtained from a sample of respondents using a structured questionnaire. Regression, correlation and descriptive analysis of the data were conducted using SPSS version 20.0

Based on the objective of the study, it was possible to draw a summary of findings from the data obtained. The results showed that the model explained 50.9% of the employee's decision to borrow as given by the coefficient of determination, (R^2). The model was also found fit to explain the relationship as the F -statistic value of 14.513 was significant at 5% level, $p=0.00$.

The study established that 78% of the respondents have taken a loan whereas 22% of the respondents have not taken a loan in the last three years. Age had a negative but insignificant effect on borrowing with a bigger percentage of young employees in the age bracket 21 – 40 years borrowing more compared to their elder colleagues in the age bracket 41-60 years. Gender had a negative but insignificant effect on borrowing with male employees borrowing more than their female colleagues. The level of education had a positive but insignificant effect on

borrowing with the employees having higher academic qualifications borrowing more. The variables with a positive and very significant effect on borrowing were number of financial dependants and level of income. Employees with more financial dependants and earning high income had borrowed the most in the last three years. This is in line with the findings by Mpuga (2004) in a study conducted to analyze demand for credit in rural Uganda. The study showed that individual attributes such as age, gender, marital status, household size, income and education level have important implications on demand for credit.

5.3 Conclusions

This study reports on the effect of age, gender, level of education, number of financial dependants and level of income on borrowing decisions of public service employees in Kenya. The study assessed the effect of level of income on employees' decision to borrow. The study found that level of income had a positive and very significant effect on borrowing with employees at high income brackets borrowing higher amounts of loans. Thus, the study concludes that level of income affects the decision to borrow. The study also examined the effect of number of financial dependants on employees' decision to borrow. The study found that number of financial dependants had a positive and very significant effect on borrowing with employees having more financial dependants borrowing higher amounts of loans. Thus, the study concludes that number of financial dependants affects the decision to borrow. This confirms the proposition by Rweyemamu et al., (2003) that demand for credit was positively influenced by household size, years of schooling of the household head, expenditure and household income.

The study assessed the effect of level of education of an employee on borrowing decision. The results showed that level of education had a weak positive effect on borrowing decision, with employees having advanced education taking higher amounts of loan. Thus, the study concludes that level of education has an insignificant effect on an employees' borrowing decision. The study also examined the effect of gender of an employee on borrowing decision. The results showed that gender had a weak negative effect on borrowing decision with slightly lower percentage of female employees taking loans compared to their male colleagues. Thus, the study concludes that the gender has an insignificant effect on borrowing decision. This slightly differs with the conclusion by Pitt and Jhander (2002) that identified gender and education level of household head as having a significant effect on credit demand.

The study assessed the effect of age of an employee on borrowing decision. The results showed that age had a weak negative effect on borrowing decision with fewer employees beyond 40 years taking loans. Thus, the study concludes that the age has an insignificant effect on borrowing decision. This is in line with the Life-cycle hypothesis; the young and energetic individuals with ambitions to earn higher incomes are expected to be more active in saving in order to accumulate wealth and that the old are likely to rely more on past savings and accumulated wealth for consumption and are less inclined to demand for credit.

5.4 Limitations of the study

Though there were records on the exact number of state corporations in Kenya, an exhaustive list of the number of employees of all the state corporations was not available at the time of the study.

It was a challenge obtaining the complete information as laid out in the questionnaire. Some of the respondents considered the information too personal to disclose. In some instances it took the intervention of a representative from Human Resource department to eliminate the fear.

Time was also a big challenge. Reaching out to respondents based outside Nairobi took much longer than expected. There was minimal feedback especially where questionnaires were sent via post.

5.5 Suggestions for further research

Since little information is available on the borrowing decisions of public service employees in Kenya, the researcher recommends that further research be carried out in order to enhance the information base for reference by policy makers. Further research may also bring to light factors that this study may not have been able to reveal.

There is a general belief that public sector employees earn relatively less despite being more qualified academically since the government emphasizes on capacity building by granting paid

study leave for staff pursuing further studies. There is a need therefore to conduct a comparative study between borrowing decisions of public service employees in Kenya against their counterparts in the private sector taking into consideration the differences in income and academic qualification.

This study population was employees of state corporations only. The results cannot therefore be generalized to apply to employees of mainstream government. Further research may be conducted to address factors that affect demand for credit by civil servants.

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APPENDICES

Appendix I: Questionnaire

I (Christine Ruoro) am a Master of Science (Msc Finance) student at the University of Nairobi. I am conducting a research project on the “effect of demand side factors on borrowing decisions of public service employees in Kenya”. I will appreciate if you would be kind enough to spare a moment to fill this questionnaire.

1. Name:.....
2. Institution:
3. 1. Gender
Male [] Female []
4. Age
21-30 years [] 31-40 years [] 41- 50 years [] 51- 60 years []
5. Number of financial dependants
1 [] 2 [] 3 [] 4 [] 5 [] 6 or more []
6. Level of education
O Level [] Diploma [] Degree [] Postgraduate []
7. Average income level (KShs.)
Below 30,000 [] 31,000-60,000 [] 61,000- 90,000 []
90,000-120,000 [] Above 120,000 []

8. (a) Have you borrowed a loan in the last three years?

Yes [] No []

(b) If, Yes how much have you borrowed (KShs.)?

Below 100,000 [] 100,000-300,000 [] 300,001- 600,000 []

600,001-1,000,000 [] Above 1,000,000 []

9. How do the following factors affect your decision to borrow?

	Very important	Important	Less important
Level of interest rate	[]	[]	[]
Ease of access	[]	[]	[]
Conditions and procedures	[]	[]	[]
Time taken before approval	[]	[]	[]
Your net pay and ability to pay	[]	[]	[]

Thank you for your participation.

Appendix II: Test of normality

	Gender of respondent	Shapiro-Wilk ^a	
		Sig.	Comment
Gender	Male	.000	significant
	Female	.002	Significant
Age bracket	21-30 years	.007	Not significant
	31 - 40 years	.000	significant
	41 - 50 years	.000	Significant
Number of dependants	1 dependant	.010	Not significant
	2 dependants	.005	Not significant
	3 dependants	.031	Not significant
	4 dependants	.029	Not significant
	5 dependants	.007	Not significant
	6 or more dependants	.001	Significant
Level of education	O Level	.001	Significant
	Diploma	.048	Not significant
	Degree	.031	Not significant
	Postgraduate	.000	Significant
Average income	Below Kshs. 30,000	.000	Significant
	Kshs. 31,000 - 60,000	.007	Not significant
	Kshs. 61,000 - 90,000	.015	Not significant
	Kshs. 90,000 -	.001	Significant
	Above Kshs. 120,000	.000	Significant
Amount borrowed	Below Kshs. 30,000	.000	Significant
	Kshs. 31,000 - 60,000	.007	Not significant
	Kshs. 61,000 - 90,000	.015	Not significant
	Kshs. 90,000 -	.001	Significant
	Above Kshs. 120,000	.000	Significant