

**DETERMINANTS OF DEMAND FOR MORTGAGE FINANCE IN KENYA: A CASE
OF NAIROBI COUNTY**

BY

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DECLARATION

I declare that this dissertation is my original work and has not been previously published or submitted elsewhere for award of degree. I also declare that this contains no materials written or published by other people except where reference is made and author dully acknowledged.

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ABSTRACT

There is a low demand for mortgage finance in Kenya this was demonstrated by the few number of mortgage accounts in Kenya. The Central Bank of Kenya report shows that there were only 22,013 mortgage accounts in Kenya in 2014. This number is very low when compared to the demand for housing and population in the country. Based on this statistics, this study aimed to determine the determinants for the demand of mortgage finance in Kenya. The study was focused on the effect of; price of mortgage substitutes, cost of mortgage, income levels and promotion on the demand for mortgage in Kenya. The target population of this study was applicants for mortgage finance both successful applicants and those who were not successful. Random sampling technique was used to obtain a sample size of 384 respondents. Data was collected using structured questionnaires. The collected primary data was analyzed using Statistical Package for Social Science (SPSS) version 20. A binary logistic regression analysis was conducted on the data set to ascertain the effects of independent variables on dependent variable. The Pearson Product was used to analyze the data in which correlation coefficient (R) and the coefficient of determination (R^2) of the variables was established. The findings from the analysis were organized and summarized in form of percentages, means ratios and frequencies and presented using tables and pie charts. The results in the multivariate logistic regression indicated that the likelihood of cheap mortgage substitutes resulting to low demand for mortgage finance in Kenya was 4.911 times higher than more costly mortgage substitutes. The findings further indicated that the likelihood of high legal cost and high stamp duty cost causing low mortgage demand are 2.550 and 2.274 times higher than when the costs are low. The findings also indicate that the likelihood of low income levels causing low demand for mortgage substitutes was 6.369 high than high income levels. Finally the findings indicate that the likelihood of lack of promotion causing low mortgage demand was 5.808 higher than having promotion. The study recommended that mortgage financing institutions should consider the cost of mortgage substitutes, cost of mortgage, income level and promotion in order to increase the demand for mortgage finance in Kenya.

Keywords: Mortgage, finance, demand, housing, determinants, logistic, regression, Kenya

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DEDICATION

I dedicate this work to my family Julia, Frank, Eddie and Sasha. I also dedicate it to the School of Business and Public Management KCA University for being a strong pillar throughout my course. I have been deeply humbled by the knowledge acquired and support accorded to me during my studies at the university.

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ACRONYMS AND ABBREVIATION

AfDB	Africa Development Bank
EU	European Union
GDP	Gross Domestic Product
MMLM	Modern Mortgage Lending Model
S&Ls	Savings and Loans Associations
SMMs	Secondary Mortgage Markets
SSA	Sub-Saharan Africa
USA	United States of America

OPERATIONAL DEFINITION OF TERMS

Mortgage finance is a debt instrument, secured by the collateral of specified real estate property that the borrower is obliged to pay back with a predetermined set of payments (Sengupta and Emmons, 2007).

Determinants is factor that decisively affects the nature or outcome of something

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

This study sought to establish the determinants for mortgage finance in Kenya. With low access to mortgage finance in Kenya for the middle class and other groups, the researcher wanted to find out the factors affecting consumption of mortgage finance in the country. Literature was reviewed from a global, regional and local perspective. Globally, Zandi and Deritis (2011) observed that the problem of housing markets resonates across many countries, both the developed and developing. Against this background, it is important to note that, a growing body of research has shown that correctly structured finance systems can deliver improved housing for larger population segments, which has caused housing finance to rise to the top of urban policy and research agendas (Datta and Jones, 2000).

The aim of a formal housing finance system is to create institutional arrangements which can efficiently mobilize and channel funds from savers to borrowers to finance a housing investment (Chiquier and Lea, 2009). At an individual level, housing finance makes it possible for people to have shelter and a real asset, which in most cases the largest investment for household. Moreover, at a macro level, it generates economic growth via job creation, economic linkages and it spurs entrepreneurial activities (IFC, 2010). In addition, housing finance plays an important role in shaping a country's wider housing system, stabilizes effectiveness of the financial system and promoting economic development (Akinwunmi et al., 2008).

Datta and Jones (2000) however argue that for housing finance to be effective; those seeking to be home owners have to be motivated to invest in homeownership. For example, Zandi and Deritis (2011) in a study on future of mortgage finance system in the U.S found that the aggressive pursuit of homeownership since 1930s was largely due to subsidies provided via mortgage interest and gains treatment, and the lower mortgage rates and

affordable housing mandates of Fannie Mae and Freddie Mac, among other channels. The Clinton and Bush administrations often pointed to the rising homeownership rate as evidence of their economic policies success. With both parties set on this policy objective, many households that should not have received mortgage loans got them. Millions of bad mortgage loans were made, homeowners would have had difficulty repaying under the best of circumstances and as a result, millions are now losing their homes. The effect of this policy; housing market is said to have gone from boom to bubble to bust over the past decade, with a devastating impact on the global economy and financial system (Zandi and Deritis (2011).

1.1.1 Mortgage finance in developed and developing economies

In most of the developed economies, their housing finance supply systems are considered to be operationally efficient in terms of intermediation (Cho, 2007). These improved efficiencies include reductions in the cost of credit intermediation. Some countries such as Britain, Denmark and United States have well developed mortgage market, where outstanding mortgage loans are almost equivalent to their GDPs. Over 90 percent of mortgage loans in Britain and about 70 percent in the European Union (EU) are sourced from deposit taking institutions. In Britain, outstanding mortgage loans at the end of 2006 were over £1,000 billion with about 60 percent provided by commercial banks (Boleat, 2008).

Globally, development of Mortgage Financing is affected by sources of funds, linkages with secondary market, mortgage products and in the role of government (Lea, 2001). The Mortgaging system of Germany and Denmark is characterized by specialized mortgage banks with mortgage bonds backed by collateral pool as the principal source of funding. Government has stringent control of the system. The United Kingdom (UK) has a depository-type housing finance system with commercial banks and savings banks as mortgage lenders. The source of fund is mainly retail deposits and the mortgage instrument is

variable rate mortgage. The government insures deposits. The housing finance system of the USA is linked to the secondary mortgage market (Lea, 2001).

In Africa house development firms rely on short term bank loans that require repayment within a short period of time in some cases before the project is completed and properties sold (Berger & Udell et al., 2003). Centre for Affordable Housing Finance in Africa (2012) reports that growth of housing finance in Africa has met challenges due to its inaccessibility and narrow range of mortgage products on offer. South Africa and Namibia are two countries in Africa with fairly large housing finance market with mortgage debt to GDP ratio of 26.4% and 19.6% respectively. Most of Sub-Saharan Africa (SSA) countries have mortgage debt to GDP ratio of 5% (Affordable Housing Finance in Africa, 2012). The challenges to growing house financing in developing countries are weak financing infrastructure and tough preconditions of access the facilities.

1.1.2 Mortgage finance in Kenya

In Kenya, some of the mortgage lenders have designed mortgage products that would encourage Kenyans to save from the early years of employment with a view of accumulating enough savings that would enable them mobilize the mortgage finance (Housing Finance, 2011). The Retirement Benefits Regulations (2009) provides for policies that would entice Kenyans to access mortgage finance. Such policies include the use of accumulated pension funds to act as security for mortgage borrowing. According to Nabutola (2004), by its nature, housing in Kenya represents major investment requiring substantial capital outlay. In the majority of housing projects, the developer whether as a corporate or an individual has to borrow? In Kenya it is estimated that over 234,000 new housing units are required every year yet only 20,000 - 50,000 units per year are currently being produced (Ministry of Housing, 2011). It is further estimated that a mere 20% of these houses are affordable to low and moderate income families (Giddings 2007).

According to Center for Affordable Housing in Africa (2011) as quoted by Corvallis, (2012) in Niger, the smallest mortgage is equivalent to Kshs. 1.228 Million (USD 14,444), while 85.6% of the country population earn below Kshs. 5,100 (USD 60). Therefore, to enable majority of Kenyans to afford to buy homes, offering incentives is critical so that the gap between the housed and the homeless is reduced significantly. This study therefore seeks to fill the knowledge gap, caused by the lack of empirical data on factors that determine demand to mortgage finance towards by carrying out the current study. The researcher intended to find out if there exist any underlying factors and their impact on the above and further make recommendations based on the study findings towards improved access to mortgage finance.

1.1.3 Determinants of demand of mortgage finance in Kenya

Mortgage finance plays a significant role in the development of the economy and in enabling people to be homeowners through provision of mortgages. Despite its significance, past statistics indicate that very few people access mortgage finance in Kenya as research indicates that at best only 3% of households in Kenya might be eligible for mortgage finance (World Bank, 2013) Kenya has mortgage to GDP ratio 2.5%, a lower access level compared to its peers in Sub-Saharan Africa (AfDB, 2013). The country is said to have a potential mortgage financing market of 3.9 million persons who are classified as middle and above out of the population of 40 million. However the country has about 22,013 outstanding mortgage accounts (CBK, 2014). According to Mutero (2007) 90% of new mortgages taken annually are concentrated in urban center especially in Nairobi.

The determinants of demand of mortgage finance in Kenya include tax levied, cost of capital, land registration systems and loan maturation period. These factors are very crucial in enhancing access to mortgage finance and have strong and positive relationship with demand

for mortgage finance in Kenya. Economic status of a Kenyan is also a determinant of demand of mortgage.

The demand for mortgage just like any other commodity is determined by very many factors. Among them are demand factors, supply factors and policy factors. Demand factors are factor that originates from the mortgage demand side such as low income, lack of information, preferences among others. Supply factors basically originate from the mortgage financing institutions such as banks and micro finances. Government policies and institutions policy can also affect the demand for mortgage. This study intend to test whether demand factor specifically; income level, lack of information, price of mortgage substitutes and the cost of mortgage affect the demand for mortgage finance in Kenya.

1.2 Problem Statement

In line with the government's effort to achieve Vision 2030 and the overall development of the economy, provision of housing is essential. There is an acute shortage of 150,000 units annually and the ever increasing population, a housing problem arises and consequently social and economic problems (Nabutola, 2004). The importance attached to housing problems by the government has resulted in the adoption of the housing policy; its implementation and effectiveness has not been adequate as is depicted by the current state of housing in Kenya.

There were various reasons deduced as causes of housing problems. The problem is coming up with ways of availing loanable funds to majority of Kenyans. Finding measures to address this problem and subsequent implementation will provide for adequate affordable housing for the majority of Kenya. UN Habitat (2003) puts forward that the informal sector, which provides for the bulk of employment to the low income group, has not been generating regular and enough income to undertake the expensive housing construction and improvement. Too much borrowing and an assumption that the prices of homes would only

go up led to the mortgage crisis. According to Baker, (2008), before the mortgage crisis, banks offered easy access to money. One could qualify for mortgages with little or no documentation. Critical evaluation of the determinants that influence the demand for mortgage financing in the country could lead to the formulation of models that if well assimilated into the existing financial system could yield effective and efficient results.

Ngugi and Njori, (2013) conducted a study on factors affecting access to mortgage finance in Nairobi. The study recommended that institutions that offer mortgage finance should foster the policy of providing incentives to potential home buyers in order to enable them access mortgage finance. Therefore this study acknowledged there was a low demand for mortgage finance in Kenya. The study therefore intended to use empirical data collected from mortgage financing institutions in Nairobi to assess the determinants of demand for mortgage finance in Kenya. The study sought to answer the question what determines the demand for mortgage finance in Kenya?

1.3 Objective of the Study

The main objective of this study was to determine the determinants for the demand of mortgage finance in Kenya a case study of Nairobi County. The specific objectives of this study were to:

- i. Establish the extent to which of price of mortgage substitutes impacts on the demand of mortgage finance in Kenya.
- ii. Determine the extent to which the cost involved in mortgage application impacts on the demand for mortgage in Kenya.
- iii. Determine the extent to which income level of the population impacts on the demand for mortgage in Kenya.
- iv. Determine the extent to which promotion impacts on the demand for mortgage in Kenya.

1.4 Research Question

The research questions were to:

- i. What extent does the price of mortgage substitute impact on the demand for mortgage finance in Kenya?
- ii. What extent does the price of mortgage/interest rate impact on the demand for mortgage finance in Kenya?
- iii. What extend does income of households in Kenya impact on the demand for mortgage finance?
- iv. What extent does promotion impact on the demand for mortgage finance in Kenya?

1.5 Scope and Limitation of the Study

The scope of this study was restricted to conventional financial institutions and households that attempted to access funds for housing development. The study was be conducted in 2015. The study examined how different factors affect the demand of the funds by households. Therefore this study was limited since there are many other factors that may be contributing to low demand for mortgage finance in Kenya which were not covered in the current study. The study was conducted in 2015.

1.6 Significance of the Study

This research will be useful to a number of stakeholders in financial institutions, households and academicians and policy makers in Kenya. The government will plan for appropriate policies, infrastructures, legal and regulations, legislations that avails affordable housing. The findings on the study will be useful to the stakeholders and players in the real estate industry.

The supply of housing is governed by supply and demand factors. Since real estate development requires time to plan, acquire necessary permits and build hence supply is very inelastic. The study will also assist individuals and households in decision making processes especially assessing the different avenues that can avail funds for housing development.

The research will bring to light opportunities available for financial innovations and house financing products that targeting low to moderate income families in the housing industry. Financial institutions and capital markets will use research to address financing gaps that currently exist in housing sector.

Given the limited knowledge in the field of mortgage financing in Kenya, the findings on the study will add to the available knowledge base of this subject. Academician and future researchers will use the finding of this study as a source of information and reference in conducting further studies on the topic or on any related area.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviewed theoretical framework that informed demand for mortgage finance in modern economies. It also provided empirical review of the factors in the study and finally conceptual framework was presented in form of a diagram.

2.2 Theoretical Overview

This section contains theories reviewed that were related to the study.

2.2.1 Title theory and lien theory of mortgages

Some banks retain and treat the mortgage as a title theory. Since the mortgage is said to hold a title interest, she has the right to possession under this theory. Some banks apply a lien theory. This theory only gives the mortgagee a lien interest in the property. In a title theory bank, the mortgage is treated as having transferred title to the mortgage, subject to the mortgagee's duty to recovery if payment is made. The title is said to remain in the mortgagee until the mortgage has been satisfied and foreclosed. Although the mortgagee has the right of possession to the property, there is generally an express agreement giving the right of possession to the mortgagor. The mortgagee is said to hold the title for security purposes only. The mortgagor is given the right of possession (Buckley and Kalarickal, 2004).

In a lien theory bank, the mortgagor retains legal and equitable title to the property, but conveys an interest that the mortgagee can only foreclose upon to satisfy the obligation of the mortgagor. This is equivalent to a future interest in the property which allows the mortgagee to use the process of foreclosure. The interest is a security interest or mortgage, which forms a lien on the property. In this theory the right to possession arises upon a default. The mortgagor has a right to sue the mortgagee for any interference with his right of possession (Ngumo, 2012). For practical applications there is usually very little difference between a lien theory and a title theory. The principle difference arising in the title theory

bank is that the mortgagee is given the right to possession before the foreclosure is complete. The language of the mortgage provides for possession rights being in the mortgagor up to the time of the foreclosure. This theory argues that that the mortgager still has all the rights to the property until the payment is cleared. Lack of this right by the mortgagee can be demotivating factor that reduces mortgage uptake. Therefore this theory is relevant to this study.

2.2.2 Innovation theory of mortgage financing

Innovations are often adopted by organizations through two types of innovation-decisions: collective innovation decisions and authority innovation decisions. The collection-innovation decision occurs when the adoption of an innovation has been made by a consensus among the members of an organization. The authority-innovation decision occurs when the adoption of an innovation has been made by very few individuals with high positions of power within an organization (Rogers, et. al., 2005). There are both positive and negative outcomes when an individual or organization chooses to adopt a particular innovation. Rogers states that this is an area that needs further research because of the biased positive attitude that is associated with the adoption of a new innovation (Rogers, et. al., 2005). In the Diffusion of Innovation, Rogers lists three categories for consequences: desirable vs. undesirable, direct vs. indirect, and anticipated vs. unanticipated.

The innovation adoption curve of Rogers is a model that classifies adopters of innovations into various categories, based on the idea that certain individuals are inevitably more open to adaptation than others. The concept of adopter categories is important because it shows that all innovations go through a natural, predictable, and sometimes lengthy process before becoming widely adopted within a population (Rogers, et. al., 2005). The late majority, on the other hand, are creatures of habit and predictability. They want to know the rules, they love systems. The beautiful thing about the late majority is that when they don't

find rules or systems, they'll start figuring them out. Laggards are very set in their way, and will only adopt innovation when it has become mainstream i.e. standard practice in an organization (Agao, 2014).

2.2.3 Modern mortgage lending model

For housing finance to be successful, continuous flow of funds must be guaranteed. Secondary Mortgage Markets (SMMs) are a mean to an end. The end is to increase the flow of funds housing. Therefore, a secondary market provides the means to accomplish this end by bringing together the originators of mortgage loans with the ultimate investors. It does this by developing new instruments and institutions that can lower the risks of mortgage lending for originators and provided them with new funding outlets. The mechanism of capital mobilization through mortgage securitization as found in advanced economies like the US, Germany, France, Italy, and others will serve as a potent driver of real estate growth and housing finance in Nigeria. Similar examples are obtainable in Asia, where the National Housing Fund thrives on, not only the deposit subscriptions, but also on housing bonds issued by the Housing Bank to finance housing development programs (Ojo and Song, 2009).

In the Modern Mortgage Lending Model (MMLM), there are a wide variety of investors ranging from depositories to mutual funds (Lea, 1999). The quality of mortgages produced by the primary market becomes much more important in a SMM. The SMM separates the act of making mortgage loans from the act of holding mortgage loans. The mortgage holding function is the strategic focus for dealing with the risks of mortgage lending (Renaud, Jaffee, 1996). According to them, the basic principle of SMM is to tap capital market investor as the long-term source for the mortgage market, thus mitigating risks of interest rate and credit risk.

2.2.4 Mortgage credit intermediation model

In the Mortgage Credit intermediation model, the mortgage markets are dependent on the existence of a network of intermediation (Stephens, 2005a, Chiquier and Lea, 2009). This network underpins the funding and origination of the credit, the information of the market, the division of obligations and responsibilities, and the provision of support if there is default. In most developed countries, mortgage intermediation was initially performed by a specially regulated and privileged class of institution. Some of the existing network of intermediaries used in Mortgage Credit intermediation model includes; State vs. a market-based mortgage system, Building societies/state banks savings and loans institutions, Commercial Banks, Secondary mortgage markets and International finance institutions. Given the recent development of the mortgage market in Kenya ,such institutions can be used in developing origination standards and network of mortgage intermediation for ensuring mortgages is accessible to low- and moderate income households.

2.3 Empirical Review

This section reviews literature from prior scholars regarding the topic under study. This section is based on study objectives. Studies have been done on mortgage finance in Kenya. For instance a world bank report done by Walley (2011), on developing Kenya's Mortgage Market suggested that Kenya has a burgeoning mortgage market, which together with other initiatives will be instrumental in providing some of the housing investment that will be needed in the coming years as the population continues to grow and Kenya's economic center shifts towards its urban settlements.

Aguko, (2012) also conducted a study on analysis of the factors influencing mortgage financing in Kenya. The study established that enhancing secure and transparent titled lands, so as to minimize the risk of mortgage lending can ensure growth in mortgage financing. The study also established that respondents indicated that laws and institutions that are created to stimulate financial development are incompatible with financial development affect mortgage

financing in Kenya. The study therefore concludes that interest rate on mortgage debt; government instruments and fiscal measures are the major policies that impact on mortgage financing. The same policies apart from facilitating mortgage financing, affects smooth completion of property transactions and foreclosures.

2.2.1 Price of substitutes and demand for mortgage financing in Kenya

Lea, (2010) in his study on alternative forms of mortgage finance argues that government policies supporting homeownership could be adjusted to focus less on mortgage debt and leverage. Many developed countries achieve similar or higher rates of homeownership than the US without a mortgage interest deduction or government subsidies for mortgage debt. The tax system in the US contributed to excessive borrower leverage and the high degree of negative equity. The current homeownership tax credit program could be expanded to replace the mortgage interest deduction.

Boyce, (2010) in his study offered the prospect of real improvement in the US mortgage finance system. He suggested it retains the core long term fixed rate mortgage product but makes it more consumer and investor friendly by adding the option to repay the loan through the bond market if rates rise. This feature would have reduced some of the negative equity build up in the US system during the crisis and the significant extension risk faced by mortgage security investors today. As discussed by Boyce (2010), the Danish system could be implemented through the Government sponsored entities (GSE) cash purchase programs that were significant during the 1980s before being largely phased out in favor of swaps and bulk purchases from individual lenders.

2.2.2 Price of mortgage and demand for mortgage financing in Kenya

Ngumo, (2012) conducted a study on the effect of interest rates on the financial performance of firms offering mortgages in Kenya. The study adopted a survey research design on a target population of all organizations registered for mortgage lending as of 31st December 2011

which were 33. The study used secondary data sources to collect data from CMA library and Central Bank of Kenya. The data collected were analyzed using multiple linear regression analysis conducted at 95% confidence level. The study established positive relationships in the five regression analysis between financial performance and the amount of mortgage loans advanced; three positive results were established between interest rates and the former. The study concludes that the amount of mortgage advanced by mortgage firms would lead to a high financial performance (EBIT) as it raises the revenue thereof. On the other hand, interest rate would positively relate with financial performance till it starts discouraging borrowings owing to increase in the cost of mortgage.

Obondy, (2013) study adopted a descriptive method where the units of study sought to establish the effect of interest rates on the supply of real estate finance in Nairobi County. The study found that there was a strong positive relationship between the lending rate and the total sales of real estate in the short term. The implication of the finding is that interest rates have significant impact on the mortgage sales. The study determined the effect of the interest rates on the supply of real estate finance and found out that more people are likely to borrow money when the interest rate is lower as doing so will cost them less than at another time. It was also evident that when the interest rate is higher, borrowing becomes more expensive and slows. Hence there was significant increase in the sales index matching with the drop in the mortgage interest.

Mukoma, Kenyanya, and Osoro (2015) study involved a census survey of all the 44 commercial banks in Nairobi as published by the Central Bank of Kenya. The study used primary data which was collected through questionnaires issued to the credit analysts in these banks at their head offices in Nairobi. These questionnaires were then collected at a later date. Data analysis was done through a regression equation which analyzed the relationship between the factors and access to mortgage finance. The results showed that, the most

important factor affecting access to mortgage finance was credit risk which greatly affects access to mortgage finance as banks take caution when lending. With regard to income level, a low income level increases the chances of defaulting in repayment and also determines affordability to meet the monthly payments. Therefore, high income investors formed the majority of applicants for mortgages. For the cost of mortgage factor, the majority of mortgage applicants require fixed rates of interest.

Ngugi and Njori, (2013) study concluded that cost of mortgage influences the potential buyers decision to high extent and that the institutions cost of mortgage is high. The study also concluded that the acquisition of mortgages by potential home owners in relation to cost of is poor. The study further concludes that the year 2012 had an average interest rate of 18.46%, the year 2011 had an interest rate of 18.04% with the year 2010 having registered the lowest interest rate of 17.65%. The study further concluded that low Cost of mortgage increases demand for housing, low Cost make credit cheaper, that low Cost of mortgage increases the borrowers capacity to acquire a mortgage and that higher Cost reduces affordability to acquire a mortgage.

2.2.3 Income and demand for mortgage financing in Kenya

Makori and Memba (2012) conducted a study on the factors affecting access to mortgage in Kisii town. Data analysis which includes regression and correlations was done to establish factors influencing mortgage financing by commercial banks in Kenya. The study established that employment status of clients affects mortgage financing among banks, the study recommended that banks are be able to identify various risks they face in lending to the borrower; this would help them to determine their interest rates.

Rust (2008) found that rising cost of capital have had a dramatic impact on housing affordability and, while property prices have been rising, have decreased the amount of loan that a low-income household is able to support. In 2004, a household earning R3500 would

have been eligible for a R101 000 loan at 11% interest over 20 years; in June of 2008, a household earning R3500 is only eligible for a loan of about R79 000, now at 16.5% interest. In 2004, a household earning R9000 per month would have been eligible for a R261 000 loan, well within the 'affordable' target market. Now, a household earning R9000 per month cannot find a house to buy at the R205 000 of mortgage finance that they can afford.

Schafer and Ladd (2001) assessed differential patterns on access to mortgage on the basis of income level of applicants in the US. They found out that persons with high streams of income could access mortgage than those with little or no steady income (Schafer and Ladd, 2001). The study concluded that income level has a positive and significant relationship with the demand for mortgage finance.

2.2.4 Promotion and demand for mortgage financing in Kenya

A study was carried out by Muguchia (2011) to investigate the effect of market information on the growth of mortgage financing. From the analysis the study found out that the lack of information reduce the demand for mortgage financing. It also revealed that independent variables like liquidity ratio and inflation had a negative impact on mortgage financing. The study concluded that information and advertising has a positive relationship with the demand for mortgage finance in Kenya.

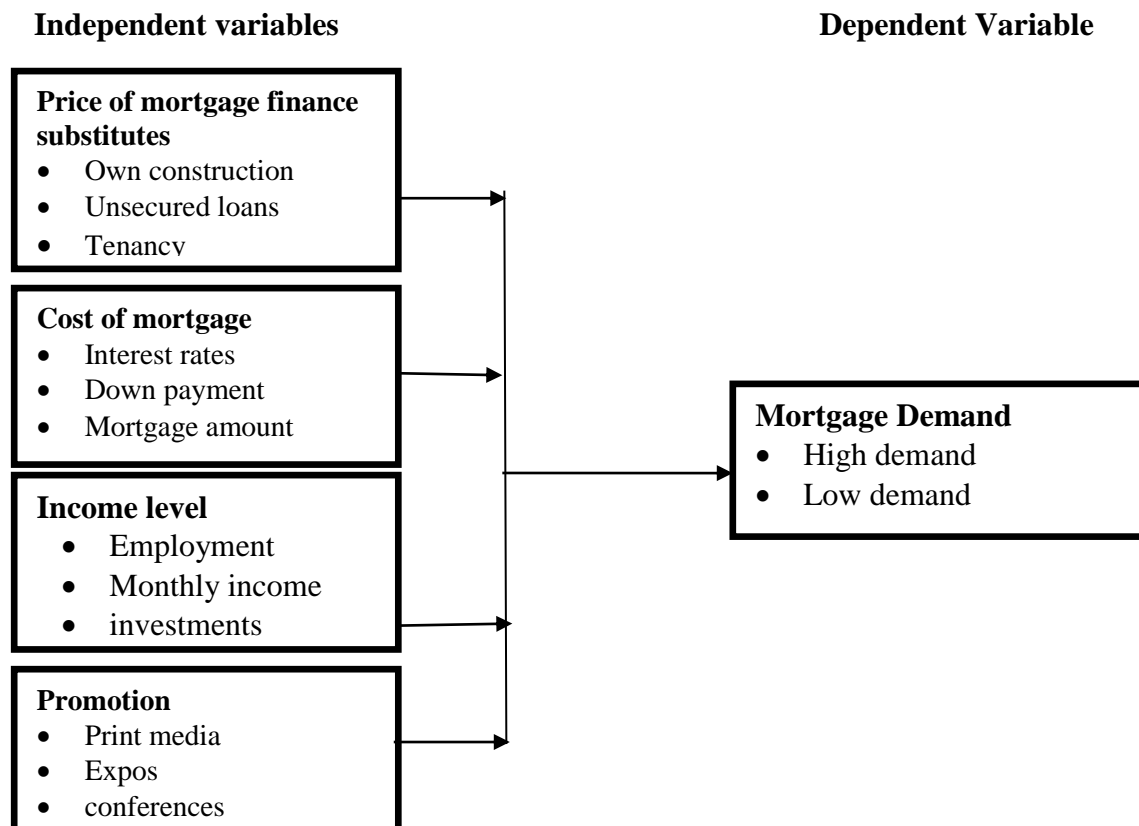
Philip (2007) in his study of "The Relationship between Advertising and Consumption in India: An Analysis of Causality" made use of unit root test, cointegration and error correction model and found out that, fluctuations in advertising expenditure positively impacts consumption expenditure. Sharma and Sharma (2009), using Fixed Effect Model of Panel Data Analysis for 134 companies, found in their study that, besides advertising, factors like company's brand, quality of the product and company's reputation affect the sales of a company.

Kumar et al. (2011), using mean and standard deviation, in their study of advertising and consumer buying behaviour with special reference to Nestle Limited, India found that, advertising and sales promotion together with the image of a company influence the consumer buying decision. They added that, the quality and price of a product also influences a consumer's purchase of a good. Banerjee et al (2012) found evidence of cointegration between marketing communication and sales in the personal care industry in India

2.4 Conceptual Framework

Conceptual framework is a systematic presentation which identifies the variables that when put together explain the issue of concern. The conceptual framework is therefore the set of broad ideas used to explain the relationship between the independent variables (factors) and the dependent variables (outcome).Figure1 shows four independent variables (determinants) and one dependent variable(demand for mortgage).

FIGURE 1
Conceptual Framework



2.5 Variable Operationalization

TABLE 1
Variable Operationalization

Variable	Variable Prefix	Type of Variable	Measurement	Dependent/Independent	Expected Sign
Mortgage finance uptake	Y ₁	ordinal	successful/ unsuccessful	Dependent	
Price substitutes	of X ₁	ordinal	<ul style="list-style-type: none"> • Own construction • Unsecured loans • Tenancy 	independent	+
Price mortgage	of X ₂	ordinal	<ul style="list-style-type: none"> • Interest rates • Down payment • Mortgage amount 	independent	+
Income level	X ₃	ordinal	<ul style="list-style-type: none"> • Employment • Core savings • Monthly income • investments 	independent	+
Information	X ₄	ordinal	<ul style="list-style-type: none"> • Print media • TV Programmes • Online adverts 	independent	+

Source Author (2015)

2.5.1 Independent variables

One of the independent variables that the study assessed was the price of mortgage substitutes. Other alternatives that can be used instead of mortgage finance. Effects of Price of mortgage substitutes was measured by as determining if people preferred own construction to mortgage finance or they went for other loans from banks and other financial institutions or finally the effects of tenancy on demand for mortgage in Kenya.

Price of mortgage/ interest rates was another independent variable in this study. The study assessed the impacts of interest rate, required deposit and the total amount of mortgage

offered on demand for mortgage in Kenya. The study proceeded on assumption that price of mortgage has a significant effect on demand for mortgage finance in Kenya.

The study also investigated the effects of level of income as a determinant of mortgage demand in Kenya. Under the level of income the study assessed the impact of core saving, monthly income and investments ownership on demand for mortgage finance in Kenya. From theoretical perspective level of income has a significant relationship with demand. The study also sought to find out the impact on information on demand for mortgage in Kenya. It assumed that a population that is more informed about mortgage finance is likely to have a higher demand than that with scanty information.

Mortgage uptake is the dependent variable of this study. The study sought to find out the impacts of price of mortgage substitutes, price of mortgage, level of income and information on demand for mortgage in Kenya. Mortgage demand in Kenya is low therefore this study focused on the above determinants of demand for mortgage.

2.6 Chapter Summary

The above chapter reviewed various the theoretical literatures, the empirical literature and conceptual framework that is used in this study. Specifically, it outlines the theories and models that inform the aspect of mortgage. The empirical literature was done according to the objectives of the study and the conceptual framework gives a diagrammatical explanation of the dependent variable and the independent variables.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discussed the type of research design, population, and target population, sampling frame, sample, sample size, sampling technique, instruments to be used, and data analysis.

3.2 Research Design

The study adopted a descriptive research design. Creswell (2002) observes that a descriptive research survey is used when data are collected to describe persons, organizations, settings, or phenomena. The study aims at observing and describing the behavior of the subjects under study without influencing it in any way and therefore considers the descriptive research survey to be the most appropriate for this study. Mugenda (2010) argues that descriptive survey is the best design to use when in a fact finding mission in order to explain a certain phenomenon. That is why the researcher opted for descriptive survey research design.

3.3 Target Population

The target population of this study was applicants for mortgage both successful applicant and those unsuccessful applicants. Ngechu (2004) noted that a population is a well-defined or set of people, services, elements and events, group of things or households that are being investigated. Since a sample is part of the target population that has been procedurally selected to represent it according to Oso and Onen (2009). According to the CBK there 35 commercial banks and 12 micro finance institutions that offer mortgage finance in Kenya. The study surveyed all the 35 banks and 12 micro finance institutions. The population of the study was 19,380 mortgage applicants; 15,000 and 4,380 applicants from commercial banks and micro finance institutions respectively in 2014.

TABLE 2
Population and Sample Size

Institutions	Population of mortgage applicants	Sample size	Percentage
35 Commercial banks	15,000	300	78.12
12 Licensed micro finance institutions	4,380	84	21.88
Total	19,380	384	100

Source Author (2015)

3.4 Sample and Sampling Technique

Random sampling technique was used in this study. According to Mugenda & Mugenda (2003) the sample size used in a study is dependent on the research design, the size of the population that was accessible, number of variables and the method of data analysis. For descriptive surveys that yield quantitative data the fisher's formula was used to calculate the most appropriate sample size. Fisher's formula was suitable for this study since the target population was more than 10,000. Using the fisher formula the sample of this study was 384 respondents.

The formula used was:
$$n = \frac{Z^2 p q}{e^2} \dots\dots\dots(i)$$

Where:

n - Represents the expected sample size

Z - Represents the abscissa if a curve that is normal and cuts the area α at the tails $1 - \alpha$

Which is equal to the desired level of confidence level which is 95% in this case

P - Represents an estimated proportion of a population attribute

q - Is obtained by calculating 1-p

e - Represents the desired precision level

Therefore a sample size of 384 was obtained as follows:

$$N = \frac{(1.96)^2 (0.5) (0.5)}{(0.05)^2}$$

=384 respondents

3.5 Data Collection Method

Data was primarily collected to provide information regarding a specific topic. Data was collected using structured questionnaires. Questionnaires were used to collect data from the mortgage applicants. The questionnaires were individually administered to the identified respondents after random selected from the population obtained from 35 banks that provided mortgage finance in Kenya. Considering the sample of 384 respondents, the researcher strived to conduct an interactive interview for purposes of shortening the period of research and also to be able to collect as much information as possible with high level of accuracy. The study also used secondary data on mortgage applicants collected from commercial banks and micro finance institutions that offer mortgage finance in Kenya.

3.6 Reliability and Validity Test of Study Instruments

In order to test the reliability and validity of the study instruments, a pilot study was conducted. The pilot study was conducted in a population that is not in the sample. However the pilot population must possess the same characteristics as the sample size. 10% of the sample size was used in the pilot study as it deemed adequate (Neuman, 2000). Validity was ensured through establishing a chain of evidence through literature review, which provided an emerging framework; pilot study, which was to fill the gap between emerging conceptual framework and later field study; and use of the questionnaire as an instrument of data collection (Paton, 2002). In order to obtain reliability of the instruments, a test-retest method was used to pilot the research instruments in order to estimate the degree to which the same results could be obtained with a repeated measure of accuracy of the same concept. In this

study the researcher administered questionnaires to respondents which were not in the sample. A re-test was done after two weeks with the same respondents. The researcher then scored the items and computed the Pearson's correlation coefficient between the two sets. After piloting the items that were found vague were rephrased to make them clear and those that were found irrelevant were replaced.

3.7 Data Analysis and Interpretation

The collected primary data was analyzed using Statistical Package for Social Science (SPSS) version 20. The study used both descriptive and inferential statistics. Mean, frequencies, correlation and regression analysis was carried out in this study. A binary logistic regression analysis was conducted on the data set. The Pearson Product Moment was used to analyze the data in which correlation coefficient (R) and the coefficient of determination (R²) of the variables will be established. The findings from the analysis were organized, summarized and presented using tables and pie charts. The empirical binary logistic regression model that was adopted for this study is as shown below. The choice of logistic regression was justified by the observation that the dependent variable was categorical in nature and hence suitable for logistic regression analysis:

$$\text{Logit (High/low demand)} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e$$

$$Y_1 = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e \dots \dots \dots (ii)$$

Y_1 = Prob (Mortgage uptake)

X_1 = Price of substitutes

X_2 = Price of mortgage

X_3 = income level

X_4 = promotion

α = the constant term

β_i = 1...4 measure of the sensitivity of the dependent variable (Y) to unit change in the predictor variables X_1 , X_2 , X_3 and X_4 .

e = is the error term which captures the unexplained variations in the model.

CHAPTER FOUR
RESULTS PRESENTATION AND DISCUSIONS

4.1 Introduction

This chapter contains presentation of the research findings. The results were presented in form of tables and charts. The results presentation follows the format of items in the questionnaire.

4.2 Response Rate

A total of 385 questionnaires were printed and distributed to the identified respondents. Out of the total number of questionnaires distributed 270 were properly filled and returned. This represented a response rate of 70.1%. According to Mugenda and Mugenda (2003) and Kothari (2004) a response rate of 50% is adequate for a descriptive study. Babbie (2004) also asserted that return rates of 50% are acceptable to analyze and publish, 60% is good and 70% is very good. Based on these assertions from renowned scholars 70.1% response rate is adequate for the study.

4.3 Socio-Demographics Characteristics of Respondents

This section contains results on socio-demographic characteristics of the respondents. These characteristics include; age group of the respondents, profession, level of income and size of their family. The study sought to find out the age group of the respondents. Table 3 below illustrates the findings.

TABLE 3
Illustrating the Age Group of the Respondents

Age Group	Frequency	Percentage (%)
Below 30	25	9.3
31 to 40	98	36.3
41 to 60	117	43.3
Above 60	30	11.1
Total	270	100

The above table clearly indicates that majority (43.3%) of the respondents were between 41 and 60 years. Those between 31-40 years were the second highest (36.3%) followed by respondents above 60 years (11.1%) and finally below 30 years were the least at 9.3% as shown above

4.3.1 Level of education of the respondents

The study conducted an analysis of the level of education of the respondents. Table 4.2 below shows the findings.

TABLE 4
Showing Level of Education of the Respondents

Level of Education	Frequency	Percentages (%)
Below secondary	5	1.9
Diploma/certificate	45	16.7
Bachelor's degree	144	53.3
Master's degree	50	18.5
Above master's degree	26	9.6
Total	270	100

This results indicate that majority (53.3%) of the respondents had Bachelor's degree. Those with Master's Degree were the second highest (18.5%) followed by Diploma/Certificates level at 16.7%. Only 9.6% reported to have above master's degree and below secondary level was the least with only 1.9% of the total respondents.

4.3.2 Occupation/profession of the respondents

The study conducted an assessment on respondents about their occupation/profession. The results are shown in the table 5 below.

TABLE 5
Showing the Occupation of the Respondents

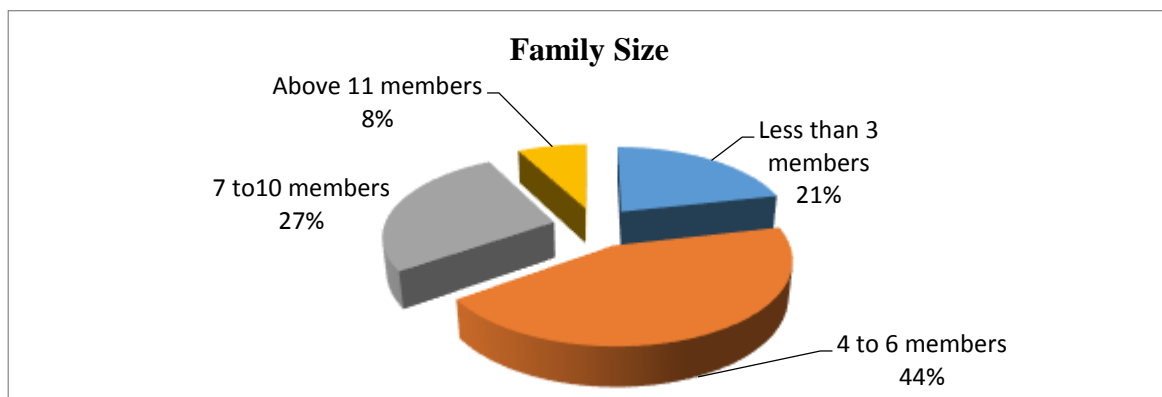
Occupation	Frequency	Percentages (%)
Office Employment	124	45.9
Self Employed	95	35.2
Business	47	17.4
others(specify)	4	1.5
Total	270	100

The results shows that majority (45.9%) of the respondents were in office employment. Respondents in self-employment were (35.2%) as shown above. Business people were 17.4% while four of the respondents who indicated others also indicated they were retired.

4.3.3 Size of the family of the respondents

The study sought to find out size of family of the respondents. Figure 2 below shows the findings.

FIGURE 2
Showing the Size of Family of the Respondents



The results in the figure above indicates that majority (44%) of the respondents had a family size of between 4 and 6 members. The respondents who indicated had a family size of between 7 and 10 members were 27% whereas 21% indicated their family size was less than 3. Respondents with a family size of above 11 members were the least at 8%.

4.4 Cost Mortgage Substitutes Influence on Demand for Mortgage Finance

The study sought to find out if mortgage finance substitutes influence people demand for mortgage finance. The mortgage substitutes that the study analysed include, cost of building/purchasing a house using own savings, cost of building/purchasing a house using ordinary loans and cost of renting/tenancy. The results in the table above show that majority 82 respondents (69.6%) were of opinion that the cost of mortgage substitutes influences the demand for mortgage finance in Kenya. Table 6 shows the results.

TABLE 6
Mortgage Substitutes Influence on Mortgage Demand

Response	Frequency	Percentages (%)
No	82	30.4
Yes	188	69.6
Total	270	100

The implication of these findings is that mortgage applicants in Kenya compare that cost of mortgage finance against other alternative ways of owning a house before deciding. These findings are in agreement with those of Boyce, (2010) who find out that in US mortgage finance market has suffered because most people go for normal loans because when interest rates increases they can opt to pay their loans through bonds market.

4.4.1 Cost of building/purchasing house using own savings and mortgage finance

This study also sought the opinions of the respondent on how cheap was own construction using savings compared to going for mortgage finance. Table 7 below shows the findings.

TABLE 7
Comparing Own Construction and Mortgage Finance

Response	Frequency	Percentages (%)
Non Response	82	30.4
Cheaper by less than 20%	56	20.7
Cheaper by between 21% to 50%	73	27
Cheaper by over 50%	59	21.9
Total	270	100

The results in the table above shows that majority (27%) were of the opinion that constructing using savings was between 21% and 50% cheaper than mortgage finance. Those who said it was cheaper by over 50% were 21.9% whereas 20.7% indicated it was cheaper by less than 20%. Those in non-response category did not respond to question one which was leading to this question. The implication of these findings is that given enough savings majority of the people would not go mortgage finance because it is viewed as expensive compared to using own savings.

4.4.2 Cost of building/ purchasing house using ordinary loan and mortgage finance

The study also sought the opinions of the respondents regarding the comparison between applying for ordinary loans and mortgage finance. The study asked the respondents to indicate how cheap they thought ordinary loan was compared to mortgage.

Majority (29.6%) of the respondents indicated the ordinary loan was cheaper than mortgage finance by less 20%. The respondents who indicated that ordinary loan was cheaper by between 21% and 50% were 20.7% and those who indicated it was cheaper by over 50% were 19.3%. No response category represents those who did give their response. The results show that majority of the respondents opinions indicate than ordinary loans are considered to be cheaper than mortgage finance and hence a major determinants for demand for mortgage finance. Table 8 shows the findings.

TABLE 8
Comparing Ordinary Loans and Mortgage Finance

Response	Frequency	Percentages (%)
No Response	82	30.4
Cheaper by less than 20%	80	29.6
Cheaper by between 21% to 50%	56	20.7
Cheaper by over 50%	52	19.3
Total	270	100

4.4.3 Cost of renting/tenancy and mortgage finance

Lastly the study analyzed the respondents' opinions on the cost of renting/tenancy compared to mortgage finance. Using a similar scale as the other substitutes the respondents were required to indicate their opinion. The results in the table below shows that majority (46.3%) indicated that renting/ tenancy was cheaper than mortgage finance by less than 20%. Those who indicated between 21% to 50% and over 50% were 14.1% and 9.2% respectively. Table 9 below illustrates the findings.

TABLE 9
Comparing Cost of Tenancy and Mortgage Finance

Response	Frequency	Percentages (%)
No response	82	30.4
Cheaper by less than 20%	125	46.3
Cheaper by between 21% to 50%	38	14.1
Cheaper by over 50%	25	9.2
Total	270	100

4.4.4 Correlation analysis of mortgage substitutes and mortgage finance demand

A correlation analysis was conducted to establish the association between items of mortgage substitutes and demand for mortgage finance. The results in the table below indicate that there is a significant association between items of mortgage substitutes and mortgage demand. Table 10 below shows the findings.

TABLE 10
Correlation Test for Mortgage Substitutes

	Q1	Q2	Q3	Q4
Do mortgage substitutes influence your demand for mortgage finance (Q1) r-value Sig. N	1 270			
Cost of building/purchasing a house using own savings (Q2) r-value Sig. N	.491* 0.00 270			
cost of building/purchasing a house using ordinary loans (Q3) r-value Sig. N	.550* 0.00 270	0.093 0.129 270		
cost of renting/tenancy (Q4) r-value Sig. N	.670* 0.00 270	.412** 0.00 270	.411** 0.00 270	
Mortgage Demand r-value Sig. N	.244* 0 270	0.276 0.013 270	0.035 0.568 270	.121* 0.047 270

These findings indicate there was no multicollinearity between study variables. A correlation of above -0.70 or +0.70 between variables is regarded as multicollinearity. The item that had insignificant association with mortgage demand was the cost of building/purchasing a house using ordinary loans ($r=0.035$ and $p=0.568$). The results imply that there is a strong association between demand for mortgage finance and the cost of mortgage substitutes.

4.4.5 Univariate binary logistic regression

The study conducted a univariate binary logistic regression to establish the odds ratio of items under mortgage substitutes to mortgage demand. The analysis gave the probability in terms of odds ratio of an item contribution low mortgage demand. The odds ratio is given in the Exp (B) column.

TABLE 11
Showing Model Summary of Mortgage Substitutes

Step	1
-2 Log likelihood	327.665a
Cox & Snell R Square	0.088
Nagelkerke R Square	0.121
Chi-square	24.950 ($p=0.000$)

The result in the table above indicates that the overall model was significant this is indicated by the p-value of chi-square. Nagelkerke R-square shows that variables in the model explain 12.1% of the variation.

TABLE 12:
Result for Univariate Binary Logistic Regression of Mortgage Substitute

	B	S.E.	Wald	df	Sig.	Exp(B)
Cost for mortgage substitutes (1)	2.439	.568	18.422	1	.000	11.457
Cost of own savings	-.169	.138	1.502	1	.220	.845
Cost of ordinary loans	-.328	.146	5.038	1	.025	.720
Cost of renting/tenancy	-.337	.190	3.163	1	.075	.714
Constant	.102	.248	.168	1	.682	1.107

A univariate logistic regression was performed to ascertain the effects of own savings, ordinary loans and renting/tenancy on the likelihood that there is low demand for mortgage in Kenya. The logistic regression model was statistically significant, $\chi^2= 24.950$, $p < .0000$. The model explained 12.10% (Nagelkerke R^2) of the variance in mortgage. Having cheap mortgage substitutes is 11.457 times more likely to cause low mortgage demand than when mortgage substitutes are more costly. The result also indicate that reducing the cost of ordinary loans is 0.720 times more likely to cause low demand for mortgage finance than high cost of ordinary loans. The cost of own construction and the cost of renting/tenancy was statistically insignificant. These findings imply that the cost of ordinary loans has a significant relationship to the demand for mortgage finance in Kenya. This finding concurs with those of Lea, (2010) and Boyce, (2010) who conducted similar studies on the impacts of alternatives form of mortgage on the demand for mortgage in US and established a significant relationship.

4.5 Impact of Cost of Mortgage on Mortgage Finance Demand

The study analyzed the influence of the costs associated with application of mortgage finance on the demand for mortgage finance in Kenya. The study analyzed the influence of interest rates, legal cost, down payment cost and stamp duty cost on mortgage demand in Kenya. The results are shown in the sections below.

4.5.1 Interest rates and mortgage finance demand

An assessment was done to establish the opinions of respondents on how affordable were the interests rates charged for mortgage financing in Kenya on the common people. The findings indicate that majority (40.7%) indicated that interest rates were unaffordable to majority of the people in Kenya. Approximately 29.6% indicated moderately affordable and 21.1% indicated that interest rates were highly affordable. The average interest rates for mortgage finance in Kenya have been varying from 19.8% in 2011 to 18% in 2012, 16.37% in 2013 and finally 15.3% p.a in 2014 (CBK, 2015). When compared to interests rates in developed

countries which goes to as low as 3%-5% p.a. while in Kenya interest rates are high and are major determinant of demand for mortgage finance (Campbell, 2013). The table below shows the findings.

TABLE 13

Illustrating Affordability of Interest Rates Charged for Mortgages in Kenya

Response	Frequency	Percentages (%)
No Response	23	8.5
Unaffordable	110	40.7
Moderately affordable	80	29.6
Highly affordable	57	21.1
Total	270	100

4.5.2 Stamp duty costs and mortgage finance demand

The study also analyzed the respondents' opinions on the impact of stamp duty cost on mortgage demand in Kenya. Majority of the respondents (27.4%) indicated that stamp duty cost was moderately affordable. Highly affordable was indicated by 24.1%, unaffordable was indicated by 27% and 21.5% did not response to this question. The table below shows the findings.

TABLE 14

Illustrating Affordability of Stamp Duty Cost Charged For Mortgages in Kenya

Response	Frequency	Percentages (%)
No Response	58	21.5
Unaffordable	73	27
Moderately affordable	74	27.4
Highly affordable	65	24.1
Total	270	100

4.5.3 Legal costs and mortgage finance demand

The study sought to find out the views of the respondents on the affordability of legal fees involved in the mortgage application process. Table 15 below shows the finding.

TABLE 15**Illustrating Affordability of Legal Cost Charged for Mortgages in Kenya**

Response	Frequency	Percent
No Response	14	5.2
Unaffordable	94	34.8
Moderately affordable	96	35.6
Highly affordable	66	24.4
Total	270	100

The findings indicate that majority (35.6%) of the respondents find legal fees to be moderately affordable. Only 24.4% indicated that legal fees were highly affordable.

4.5.4 Down payment costs and mortgage finance demand

The study also conducted an analysis on the down payment cost to establish the views of the respondents on the affordability of the down payment cost. Majority (32.6%) of the respondents indicated that the down payment cost was moderately affordable. Approximately 29.6% indicated that down payment cost was unaffordable while 29.3% indicated that down payment cost was highly affordable. The findings are shown in the Table 16 below.

TABLE 16**Illustrating Affordability of Down Payment Cost for Mortgages in Kenya**

Response	Frequency	Percent
No Response	23	8.5
Unaffordable	80	29.6
Moderately affordable	88	32.6
Highly affordable	79	29.3
Total	270	100

4.5.5 Correlation analysis

Correlation analysis was conducted to establish the association between variables. Correlation analysis inform on the association between variables without telling us the nature of the association. Association of above 70% is considered unfavorable because it indicates that the variables are measuring the same aspect and only one could be used but not all. The table below shows the findings.

TABLE 17
Correlation Analysis of Cost of Mortgage Variables

		Overall Cost of mortgage	Interest Rates	Legal Cost	Stamp Duty Cost	Down Payment Cost
Interest Rates	r-value	-0.082				
	Sig.	0.179				
	N	270				
Legal Cost	r-value	-.301**	.335**			
	Sig.	0	0			
	N	270	270			
Stamp Duty Cost	r-value	.487**	-0.093	-.193**		
	Sig.	0	0.129	0.001		
	N	270	270	270		
Down Payment Cost	r-value	0.009	.193**	.387**	0.041	
	Sig.	0.888	0.001	0	0.498	
	N	270	270	270	270	
Mortgage Demand	r-value	.210**	.174**	.203**	.247**	.213**
	Sig.	0.001	0.004	0.001	0	0
	N	270	270	270	270	270

The results in the table above indicate that there is no multicollinearity between variables. The result also shows that there is a significant association between interest rates ($r=0.174$, $p=0.004$), stamp duty cost ($r=0.247$, $p=0.000$), legal cost ($r=0.203$, $p=0.001$), down payment cost ($r=0.213$, $p=0.000$) and demand for mortgage finance in Kenya.

4.5.6 Univariate binary logistic regression

Logistic regression was conducted to establish the likelihood of the costs of mortgage causing low demand of mortgage finance in Kenya. Table 18 below shows the finding.

TABLE 18
Showing Model Summary of Cost of Mortgage Variables

Step	1
-2 Log likelihood	305.481a
Cox & Snell R Square	0.16
Nagelkerke R Square	0.22
Chi-square	47.134 ($p=0.000$)

The result in the table above indicates that the overall model was significant this is indicated by the p-value of chi-square. Nagelkerke R-square shows that variables in the model explain 22% of the variation.

TABLE 19
Result for Univariate Binary Logistic Regression of Cost of Mortgage Variables

	B	S.E.	Wald	df	Sig.	Exp (B)
Overall cost of mortgage(1)	1.104	.592	3.479	1	.062	3.016
Interest Rates	.325	.166	3.821	1	.051	1.384
Legal Cost	.716	.230	9.730	1	.002	2.046
Stamp Duty Cost	.428	.198	4.663	1	.031	1.534
Down Payment Cost	.298	.161	3.423	1	.064	1.347
Constant	-3.284	.837	15.411	1	.000	.037

A logistic regression was done to establish the impacts of interest rates, legal cost, stamp duty cost and down payment cost on the likelihood of causing low demand for mortgage in Kenya. The logistic regression model was statistically significant, $\chi^2 (4) = 47.134, p < .0000$. The model explained 22.0% (Nagelkerke R^2) of the variance in mortgage demand. The results indicate that increasing interest rates is 1.384 times more likely to cause low mortgage demand than having reduced interest rates. The results also indicate that increasing legal cost is 2.046 times more likely to cause low demand for mortgage finance than affordable legal cost. Further the results indicate that increasing stamp duty cost is 1.534 times more likely to lower the demand for mortgage finance in Kenya than reduced stamp duty cost. The cost of down payment and the overall cost of mortgage were statistically insignificant. The findings of this study are in agreement with those of Ngumo, (2012) and Mukoma, Kenyana, and Osoro (2015) whose findings showed that one important factor affecting access to mortgage finance was credit risk making banks cautious when lending.

4.6 Impact of Income Level on Demand for Mortgage Finance

Effect of income level on demand for mortgage finance was analysed. Respondents were asked to indicate whether levels of income determined the demand for mortgage finance in Kenya. The study sought to find out the income level of the respondents and the table below shows the findings.

TABLE 20
Income Level Influence on Mortgage Demand

Response	Frequency	Percent
No	56	20.7
Yes	214	79.3
Total	270	100

The results indicate that 79% of the respondents agreed that income level was a determinant of mortgage finance in Kenya. Only 20% disagreed that income level has an impact on demand for mortgage finance.

4.6.1 Income Levels of the Respondents

A survey on the income levels of the respondents was conducted and the table below shows the findings.

TABLE 21
Showing Income Levels of the Respondents

Category	Frequency	Percentage (%)
No Response	56	20.7
Below 100,000	50	18.5
Between 101,000 to 150,000	61	22.6
Between 151,000 to 200,000	49	18.1
Over 200,000	54	20
Total	270	100

The results indicate that majority (22.6%) of the respondents had income level of between Kshs 101,000 and Kshs 150,000. Twenty percent (20%) of the respondents indicated an income level of over Kshs 200,000 while below Kshs 100,000 and between Kshs 151,000 and Kshs 200,000 was indicated by 18.5% and 18.1% respectively. Majority of the respondents indicated that they were office employed. The study noted that majority of

mortgage applicant had income level of above Kshs 100,000. The Table 21 below shows the findings.

4.6.2 Univariate binary logistic regression on impact of level of income

Logistic regression was conducted to ascertain the impacts of level of income on demand for mortgage finance in Kenya. The results are presented in the Table 22 and Table 23 below.

TABLE 22
Showing Model Summary Impact of Level of Income

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square	Chi-square
1	331.483 ^a	.075	.103	X ² = 21.333 (0.000)

Logistic regression model was statistically significant ($\chi^2=21.33$ $p=0.000$). The variance explained was 10.3% (Nagelkerke R^2). This implies that income level explains 10.3% of variation in demand for mortgage finance in Kenya. The odds ratio of income levels and mortgage demand are shown in the Table 23 below. This implies that income level has a significant relationship with the demand for mortgage finance in Kenya.

TABLE 23
Result for Univariate Binary Logistic Regression on Impact of Level of Income

	B	S.E.	Wald	df	Sig.	Exp(B)
Income_level_1(1)	1.345	.348	14.947	1	.000	3.839
Income_level_2	.046	.103	.199	1	.656	1.047
Income_level_3(1)	-.037	.266	.020	1	.888	.963
Constant	-.534	.311	2.947	1	.086	.586

The results indicated that the likelihood of low income levels causing low mortgage demand is 3.839 times higher than high income level. The results also establish that increasing income increases the demand for mortgage finance in Kenya up to a certain optimal point although the relationship was insignificant. It is assumed that people with very high income opt to use their own savings instead of mortgage. These findings agree with those of Makori and Memba, (2012) who conducted a study on the factors affecting access to

mortgage in Kisii town and established that employment status of clients affected mortgage financing among banks. Similarly, Rust (2008) found out that rising cost of capital have had a dramatic impact on housing affordability and, while property prices have been rising, have decreased the amount of loan that a low-income household is able to support.

4.7 Impact of Promotion on Demand for Mortgage Finance

The final objective of the study was to establish the impact of promotion on the demand for mortgage finance in Kenya. Types of promotion analysed included seeking information newspapers and attending expos and conferences on mortgage finance. The study analysed the how often do respondents seek information on mortgage from newspaper and the number of times they have attended expos and conferences on mortgage financing. The results are presented in the sections below.

4.7.1 Does promotion on mortgage finance affect the demand for mortgage finance

The study sought to find out the opinions of respondents on whether promotions on mortgage finance influenced the demand for mortgage in Kenya. Below are the findings;

TABLE 24
Whether Promotion Affect Mortgage Demand

Response	Frequency	Percent
No	84	31.1
Yes	186	68.9
Total	270	100

Results indicate that majority (68.9%) of the respondents affirmed that promotion has positive impact on mortgage demand. Availability of information on mortgage finance has an effect on the demand for mortgage. It can be assumed that the higher the information the more the demand increases.

4.7.2 Frequency of seeking information on mortgage in newspapers

The study sought to find out how often respondents accessed newspaper for the purpose of seeking information of mortgage finance. The frequencies were in categories of “Not at all”, “Daily”, “Weekly” and finally “Monthly”. The findings are shown in Table 25 below.

TABLE 25

Illustrating Frequencies of Respondents Access to Newspapers for Information

Response	Frequency	Percent
Not at all	59	21.9
Daily	76	28.1
Weekly	67	24.8
monthly	68	25.2
Total	270	100

Only 28.1% of the respondents indicated that they accessed newspapers daily seeking information on mortgage finance. Twenty-one point nine (21.9%) percent indicated they don't seek information on mortgage from newspaper at all while 25.2% indicated only seek information on mortgage finance in newspapers once every month. Those who seek information weekly were 24.8% of the total respondents. The findings imply that a larger percentage of the population are lacking credible information on mortgage finance which may be contributing to low demand for mortgage finance in Kenya.

4.7.3 Frequency of attending expos and conferences on mortgage finance

The study was interested in finding out how often respondents attended expos and conferences particularly held to market mortgage finance by institutions offering mortgage. Majority (30.7%) of the respondents indicated that they have never attended expos and conferences promoting mortgage finance. Twenty-five point nine (25.9%) indicated to have attended over five times while 20.4% attended between 3 and 5 times. These findings imply that either majority of the respondents don't attend expos and exhibitions on mortgage finance or expos are not held regularly for people to attend.

Generally, based on the findings of these study it be concluded that majority of the people lack enough information on mortgage finance this is supported by the finding that over of 50% respondents don't seek information on mortgage finance. The situation may be worse since the respondents were sampled from the list of mortgage applicants which imply they at least had some information on mortgage finance. The table below summarizes the findings.

TABLE 26
Illustrating Frequencies of Respondents Attending Expos and conferences

Response	Frequency	Percentage (%)
Not at all	83	30.7
less than 2 times	62	23
3 to 5 times	55	20.4
over 5 times	70	25.9
Total	270	100

4.7.4 Univariate binary logistic regression

Logistic regression was conducted to establish the effects of promotion on demand for mortgage finance in Kenya. Logistic regression model was statistically significant ($\chi^2=34.592$ $p=0.000$). The variance explained was 16.5% (Nagelkerke R^2). This implies that promotion contributes 16.5% of variation in demand for mortgage finance in Kenya. The results are shown in the table below.

TABLE 27
Model Summary on effects of Promotion on Demand for Mortgage

Step	1
-2 Log likelihood	318.023 ^a
Cox & Snell R Square	0.12
Nagelkerke R Square	0.165
Chi-square	$X^2=34.592$ ($p=0.000$)

The odds ratio of promotion and mortgage demand are shown in the Table 28 below.

TABLE 28**Logistic Regression Results of Effect of Promotion on Demand of Mortgage**

	B	S.E.	Wald	df	Sig.	Exp(B)
Promotion_1(1)	1.428	.284	25.240	1	.000	4.170
Accessing Newspapers	.232	.126	3.408	1	.065	1.262
Attending Expos & Conferences	.154	.118	1.710	1	.191	1.166
Constant	-1.304	.457	8.130	1	.004	.271

The results indicate that the likelihood of lack of promotion resulting to low demand for mortgage finance is 4.170 times higher than having promotion. The results also indicate that seeking information in newspaper and attending expos and conferences have increasing effect on the demand for mortgage although the relationship was insignificant. This finding conquers with those of Muguchia (2011) who investigated the effect of market information on the growth of mortgage financing and found out that lack of information reduced the demand for mortgage financing. Kumar et al. (2011) also investigated advertising and sales promotion together with the image of a company influence the consumer buying decision. He concluded that advertising influence consumer buying behaviour. Based on the findings of this study and analysis of literature, this study concluded that promotion has a positive impact on mortgage finance in Kenya.

4.8 Multivariate Logistic Regression Model

To establish the joint effects of all the study variables a multivariate logistic regression was done. The variables in this regression consisted of only variables that were significant at univariate stage for all the variables. The results of this regression are shown below.

TABLE 29**Model Summary of Significant Variables**

Step	1
-2 Log likelihood	243.542 ^a
Cox & Snell R Square	0.332
Nagelkerke R Square	0.456
Chi-square	$X^2=109.073$ (p=0.000)

Multivariate logistic regression model was statistically significant ($x^2=109.073$, $p=0.000$). The variance explained was 45.6% (Nagelkerke R^2). This implies that the variables in the model contribute 45.6% of variation in demand for mortgage finance in Kenya.

TABLE 30**Results for Multivariate Regression of Significant Variables**

	B	S.E.	Wald	df	Sig.	Exp(B)
Price for mortgage substitutes	1.592	.437	13.269	1	.000	4.911
Price for mortgage substitutes_3	-.294	.171	2.967	1	.085	.745
Legal Cost for mortgage	.936	.199	22.187	1	.000	2.550
Stamp duty cost for mortgage	.822	.170	23.340	1	.000	2.274
Income level_1(1)	1.851	.398	21.670	1	.000	6.369
Promotion_1(1)	1.759	.342	26.489	1	.000	5.808
Constant	-5.45	.786	48.222	1	.000	.004

The results in the multivariate logistic regression indicate that the likelihood of cheap mortgage substitutes resulting to low demand for mortgage finance in Kenya is 4.911 times higher than more costly mortgage substitutes. Decreasing the costs of mortgage substitutes has a decreasing effect on mortgage demand. The findings further indicate that the likelihood of high legal cost and high stamp duty cost causing low mortgage demand are 2.550 and 2.274 times higher than when the costs are low. The findings also indicate that the likelihood of low income levels causing low demand for mortgage substitutes is 6.369 high than high income levels. Finally, the findings indicate that the likelihood of lack of promotion causing low mortgage demand is 5.808 higher than having promotion.

The findings of this study are in agreement with those of Ngumo, (2012) who conducted a study on the effect of interest rates on the financial performance of firms offering mortgages in Kenya. The author suggested that interest rates would positively relate with financial performance until it starts discouraging borrowings owing to increase in the cost of mortgage. Obondy, (2013) also provided evidence that when the interest rate is higher; borrowing becomes more expensive and slow. Makori and Memba, (2012) used regression and correlations to establish factors influencing mortgage financing by commercial banks in Kenya and established that income status of clients affects mortgage financing among banks.

Schafer and Ladd (2001) assessed differential patterns of access to mortgage on the basis of income level of applicants in the US. They found out that persons with high streams of income could access mortgage than those with little or no steady income. The study concluded that income level has a positive and significant relationship with the demand for mortgage finance. Philip (2007) in his study of “The Relationship between Advertising and Consumption in India: found out that, fluctuations in advertising positively impacts consumption expenditure.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter contains a summary of the research findings, conclusions and recommendations.

This was done in line with the objectives of the study.

5.2 Summary of Findings

This section provides a summary of the findings from the analysis. This was done in line with the objectives of the study.

5.2.1 Effect of mortgage substitutes on mortgage demand

The first objective of the study was to establish the impacts price of mortgage substitutes on the demand of mortgage finance in Kenya. Majority (69.6%) of the respondents affirmed that the cost of mortgage substitutes influenced the demand for mortgage finance. These findings were supported by the result of regression that showed having cheap mortgage substitutes is 11.457 times more likely to cause low mortgage demand than when mortgage substitutes are more costly.

These findings are in agreement with those of Boyce, (2010) who find out that in US mortgage finance market has suffered because most people go for normal loans because when interest rates increase they can opt to pay their loans through bonds market. Lea, (2010) in his study on alternative forms of mortgage finance argues that supporting homeownership could be adjusted to focus less on mortgage finance.

5.2.2 Effect of cost of mortgage on mortgage demand

The second objective of the study was to assess the impacts of the cost involved in mortgage application on the demand for mortgage finance in Kenya. Majority (78.5%) of the respondents agreed that costs involved in mortgage application influenced the demand for mortgage finance in Kenya. These findings were supported by the findings of regression

analysis that showed that high interest rates are 1.387 times more likely to cause low mortgage demand than having reduced interest rates. The results also indicated that increasing legal cost was 2.046 times more likely to cause low demand for mortgage finance than affordable legal cost. Further the results indicated that high stamp duty cost was 1.534 times more likely to cause low demand for mortgage finance in Kenya than reduced stamp duty cost.

The findings of this study concur with those of Ngumo, (2012) who concluded that interest rate would positively relate with financial performance till it starts discouraging borrowings owing to increase in the cost of mortgage. Obondy, (2013) provided evidence that when the interest rate is higher; borrowing becomes more expensive and slows. Mukoma, Kenyanya, and Osoro (2015) on the other hand showed that the most important factor affecting access to mortgage finance was credit risk which greatly affects access to mortgage finance as banks take caution when lending. Ngugi and Njori, (2013) study concluded that low Cost of mortgage increases demand for housing, low Cost make credit cheaper, that low Cost of mortgage increases the borrower's capacity to acquire a mortgage and that higher Cost reduces affordability to acquire a mortgage.

5.2.3 Effect of income levels on mortgage demand

The third objective of the study was to establish the impacts of income levels on the demand for mortgage finance in Kenya. The results indicated that the likelihood of low income levels causing low mortgage demand is 3.839 times higher than high income level. The results also establish that increasing income increases the demand for mortgage finance in Kenya up to a certain optimal point although the relationship was insignificant.

This study finding concurs with those of Makori and Memba, (2012) who established that employment status of clients affected mortgage financing among banks. The results also agree with those of Rust (2008) who found out that rising cost of capital had a

dramatic impact on housing affordability. Schafer and Ladd (2001) also asserted that persons with high streams of income could access mortgage than those with little or no steady income.

5.2.4 Effect of promotion on mortgage demand

The fourth objective of the study was to establish the impacts of promotion on the demand for mortgage finance in Kenya. The findings indicated that the likelihood of lack of promotion causing low mortgage demand is 5.808 higher than having promotion. Results also indicate that majority (69%) of the respondents affirmed that promotion has positive impact on mortgage demand. Availability of information on mortgage finance has an effect on the demand for mortgage. It can be assumed that the higher the information the more the demand increases. These findings conquer with those of Muguchia (2011) who found out that the lack of information reduce the demand for mortgage financing. Kumar et al. (2011) also showed that advertising and sales promotion together with the image of a company influence the consumer buying decision.

5.3 Conclusions

Based on the research findings and literature review, this study therefore concludes that price of mortgage substitutes has a significant relationship with demand for mortgage finance in Kenya. If the cost of purchasing /building a house using own savings or using ordinary loans from loaning facilities is significant low, it will lower the demand for mortgage finance in Kenya. The study also concludes that the costs involved in mortgage application such as legal cost, stamp duty cost, down payment have a significant relationship with the demand for mortgage finance in Kenya.

The higher the costs the lower the demand for mortgage finances. Further, the study concludes that income levels of the people directly affect the demand for mortgage finance. People with very low income and very high income have low likelihood of demanding

mortgage finance. Finally, this study concludes that promotion/information availability have a significant relationship with the demand for mortgage finance in Kenya. A population that is more informed on mortgage finance will have high demand than the least informed.

5.4 Recommendations

The study found out the mortgage uptake in Kenya is influenced by; the cost of mortgage substitutes, income levels of the people, mortgage application cost and the level of promotion or awareness. Based on these findings the study therefore, proposes the following recommendations to stakeholders in the mortgage financing sector.

- i. Mortgage institutions should evaluate the cost of mortgages substitutes for comparison and ensure advantages of mortgage finance outweighs other alternatives.
- ii. Mortgage institutions should revise their interest rates to be economically viable.
- iii. Others costs involved in mortgage application such as stamp duty, legal cost should be waived or taken care of by the mortgage institutions. Down payment should be agreed upon by both the mortgagee and the institution.
- iv. Mortgage institutions should custom made interest rates in relation to one's income.
- v. Banks and mortgage institutions should carry out promotion campaigns to increase awareness on mortgage finance options in the market.

5.5 Areas for Further Studies

The study assesses of effect of demand side factors on the demand for mortgage finance in Kenya. Thus other studies could consider supply side factors that affect the demand for mortgage finance in Kenya for the purpose of making a comparison of the findings with those of the current study. The study also suggests that other studies could consider the effect of institution policy and Central Bank policy on the demand for mortgage finance in Kenya.

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APPENDICES

APPENDIX I

Letter of Introduction

Date.....

Dear Sir,

RE: VOLUNTARY PARTICIPATION IN DATA COLLECTION

My name is Alfred Irungu a Master's of Science Commerce student from KCA. I am conducting a study on "*the determinants of demand for mortgage finance in Kenya*". Your feedback and views on the mentioned will help in compiling my research. The data collected is for research purposes only and it takes the form of a survey which should take no more than 15 minutes of your time. All responses received are anonymous and information collected will not be distributed to any other party.

Thank you for taking time to complete this survey.

Yours Sincerely,

Alfred Irungu

Research Student

APPENDIX II

Research Questionnaires

This is an academic research questionnaire to determine the determinants for the demand of mortgage finance in Kenya, a case study of Nairobi County.

Kindly answer the following questions as honestly and accurately as possible. The information given will be treated with a lot of confidentiality. Please do not write your name anywhere on this questionnaire. You are encouraged to give your honest opinion.

SECTION A: DEMOGRAPHIC INFORMATION

1. Indicate your age group in years

Below 30

31 to 40

41 to 60

Above 60

2. Indicate your level of education

Below secondary

Diploma/certificate

Bachelor's degree

Master's degree

Above master's degree

3. Indicate your occupation/profession

Office Employment

Self Employed

Farmer

others(specify)

4. Kind indicate the size you're of the family

- Less than 3 members
- 4 to 6 members
- 7 to 10 members
- Above 11 members

SECTION B: PRICE OF MORTGAGE SUBSTITUTES AND DEMAND FOR MORTGAGE FINANCE

1 Do mortgage substitutes influence your demand for mortgage finance?

- a) Yes
- b) No

2 if yes to question 1, how do you compare the cost of building/purchasing a house using own savings to mortgage?

- a) Cheaper by less than 20%
- b) Cheaper by between 21% to 50%
- c) Cheaper by over 50%

3 if yes to question 1, how do you compare the cost of building/purchasing a house using ordinary loans to mortgage?

- a) Cheaper by less than 20%
- b) Cheaper by between 21% to 50%
- c) Cheaper by over 50%

4 if yes to question 1, how do you compare the cost of renting/tenancy to cost of mortgage?

- a) Cheaper by less than 20%
- b) Cheaper by between 21% to 50%

c) Cheaper by over 50%

SECTION C: PRICE OF MORTGAGE AND DEMAND FOR MORTGAGE FINANCE

1. Does price of mortgage affect the demand for mortgage financing?
 - a) Yes
 - b) No

2. If yes to question 1 above how affordable are the interest rates cost in a mortgage financing?
 - a) Unaffordable
 - b) Moderately affordable
 - c) Highly affordable

3. If yes to question 1 above how affordable is the legal cost in a mortgage financing?
 - d) Unaffordable
 - e) Moderately affordable
 - f) Highly affordable

4. If yes to question 1 above how affordable is the stamp duty cost in a mortgage financing?
 - g) Unaffordable
 - h) Moderately affordable
 - i) Highly affordable

5. If yes to question 1 above how affordable is the down payment cost in a mortgage financing?
 - j) Unaffordable
 - k) Moderately affordable
 - l) Highly affordable

6. What other costs associated with mortgage finance do you find unaffordable in the process of mortgage application?
 1.
 2.
 3.
 4.

SECTION D: INCOME LEVEL AND DEMAND FOR MORTGAGE FINANCE

1. Do the levels of income influence the demand for mortgage finance?

a) Yes

b) No

2. If yes in question 1 above kindly indicate your income levels (kshs)

a) Below 100,000

b) Between 101,000 to 150,000

c) Between 151,000 to 200,000

d) Over 200,000

3. What is your main source of income?

a) Employment

b) Own business

SECTION E: PROMOTION AND DEMAND FOR MORTGAGE FINANCE

1. Does promotion/information on mortgage finance affect the demand for mortgage finance?

a) Yes

b) No

2. How frequently do you purchase newspapers for the purposes of seeking information on mortgage finance?

a) Not at all

b) Daily

c) Weekly

d) Monthly

3. How many times how you gone for expos and conferences on mortgage financing?

a) Not at all

- b) less than 2 times
- c) 3 to 5 times
- d) over 5 times

4. In which other ways do you seek information about mortgage financing

- a.
- b.
- c.